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Every physician interests himself in some line of work, internal medicine, surgery, gynecology, genito-urinary diseases, etc. The classification of no two men's literature would be alike. For the general practitioner, a dozen boxes would be more than sufficient, into which the knowledge given in a hundred volumes of journals could be contained. His classification might be, first, continued fevers; second, the exanthemata; third, nervous diseases; fourth, stomach and bowel diseases; fifth, other abdominal conditions; sixth, diseases of women; seventh, diseases of bones, joints, and muscles; eighth, puerperal conditions; ninth, genito-urinary and rectal diseases; tenth, special conditions of the throat, nose and skin; eleventh, tuberculosis; twelfth, therapeutics other than medicinal.

Each of these subjects can be subdivided into many parts, according to a man's inclination and the demands of his work. The surgeon will have a box for each of the organs which he explores. The specialist would have a box for each of the diseases which he is called upon to treat. Sectional bookcase manufacturers now make filing cases to fit the regular book sections, so that these devices allow of no deviation or irregularity in even the particular man's library.

Now a dozen articles may come out in as many different journals on one particular subject. If one of the articles is comprehensive of all that is written in the other eleven, what is the use of saving the other eleven? We receive our journals and they are neatly piled on the corner of our desk or book-case each morning. We glance at the advertisements, finger the leaves, see something good, and lay it aside for future reference, when we may need it. But when we need it, where or when did we see it, and how or where are we to find it? We have our waste-basket, or boxes, or scissors, a paper of pins, and we are ready to locate "what we want, where we want, when we want it."

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DIPHTHERIA-CARRIERS.

H. Albert, Iowa City, Iowa, reviews and criticizes the various methods that have been employed in the management of diphtheria-carriers, including the use of serum treatment, staphylococcus sprays, etc. He gives his experience and experiments as to the presence of the diphtheria bacilli of carriers in the tonsillar crypts. These, he says, seem to be the logical place for them, since they are usually the ones primarily affected, and when diphtheria bacilli have gained entrance to the larger crypts they are but little disturbed. Those who have had extensive experience with carriers have found them with enlarged tonsils and deep and prominent crypt openings. Kretschmer has succeeded in freeing thirteen patients from the carrier condition by squeezing out these crypts after other simple measures had failed.

Albert describes the method of treating these cases used at the Iowa University Hospital by Dr. L. W. Dean in 1911, who was the first, as far as he knows, to use such applications for this purpose. A 5 to 10 per cent. solution of silver

nitrate in distilled water is made up and kept in a dark-colored bottle and applied by metal applicators, around which a very small amount of cotton is wound. This is dipped in the solution, the excess squeezed out against the neck of the bottle so as to prevent its trickling down the throat, and with the tongue well pressed down the crypts should be probed, preferably from below upwards. The larger openings are easily found, and in probing them it is well to redip the applicator each time. The smaller ones are not so easily found, but several of them can be probed without redipping. The method seems to cause an inflammatory reaction, destroying the epithelium of the crypts and tending to obliterate their lumen. His experience has assured him that the method is efficacious, less dangerous than the staphylococcus spray and the best single remedy we have.—*J. A. M. A.*, September 27.

Sex is no important factor in the determination of blood pressure.—*Medical Times.*

AFTER THE ACUTE DISEASES

such as typhoid fever, pneumonia, pleurisy, influenza, or those requiring surgical operations, the return to health often depends on the thought and attention given to restorative treatment. If, however, a reconstructive like

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Vermont Medical Monthly.

VOL. XX.

JANUARY 15, 1914.

NUMBER 1

ORIGINAL ARTICLES.

PROGRESS AND PROBLEMS IN PRE-VENTIVE MEDICINE.*

BY

M. J. ROSENAU.

Professor of Primitive Medicine, Harvard University.

A CONSTRUCTIVE PROGRAM.

Formerly hygienic and sanitary measures were based almost solely upon a negative program. This was necessarily so because we had to await the exact observations of Pasteur before the sanitary sciences could be placed upon a sound basis of fact. The old books of hygiene were full of fads and fancies. By the old books I do not mean ancient tomes, but the books which were regarded as authority when I was a medical student. The whole sanitary system was then a vague or confused jumble and an uncertain guide. The system was an assemblage of sanitary don'ts. We were told what not to do, in order to avoid infection, or to improve our bodily vigor. When the sanitarian of yesterday did depart from this negative program and ventured to give counsel of a positive character, it turned out to be mostly guess work and very often wrong.

When I was a boy they told me not to catch cold, but they could not tell me what to do in order not to catch cold, and if they did it was mostly poor advice. Thus I was taught to fear the night air, whereas now we know that the air by night is cleaner than the air by day in that it contains less dust and fewer bacteria, and our common sense confirms the observation that the night air in itself contains no injurious qualities. Patients with tuberculosis, and even pneumonia, are freely exposed to the health-giving tonic properties of the cool night air.

There must be many present who have heard about the noxious emanations and poisonous miasmata wafted mysteriously in the night air,

*Trust Fund Address, prepared and read for the 100th Anniversary Meeting of the Vermont Medical Society.

to fret and plague us. This notion that the night air is harmful was a logical conclusion drawn from the observation made from time immemorial that malaria stalks by night. The reason for this is quite clear to us now since we know that the malarial mosquito, like the tiger prowls at night in search of its quarry. In warm malarious regions the misinformed folk close all the shutters of the house very tightly at nightfall in order to keep out the dreaded malarious invasion, thus imperfectly guarding against mosquitoes, and at the same time favoring the spread and development of tuberculosis, which is especially rife in the tropical belt. I have often observed that when one of these benighted people sallies forth into the night air he throws a scarf over his mouth and nose in order to filter out the poisonous effluvia from the air he is breathing. At the same time I have seen large ferocious anopheles mosquitoes freely biting the hand that held the scarf in place.

Furthermore, when I was a boy I was swathed in flannels and partially parboiled in overheated schoolrooms; my vasomotor tone was so relaxed by this coddling that it could not respond promptly to aid my heart-regulating apparatus in an effective manner. Therefore, I was susceptible to colds and was taught to fear drafts. We now know that colds are caught from other persons having colds, just as diphtheria is contracted from diphtheria. Arctic travelers exposed to all the rigors ordinarily supposed to produce colds do not suffer from these ailments until they return to civilization and become infected by contact with their fellowmen. It is not the engineer in the cab who catches cold so much as the passengers in the crowded, stuffy, overheated and dusty Pullmans.

The term "common colds" is used here to mean the acute infections of the mucous membranes of the upper respiratory passages. It does not include the many chronic congestive inflammatory states due to reflex mechanical or chemical irritants to which these parts are directly exposed and to which they often become exquisitely sensitive.

In brief, then, we are now able to tell people that the way to guard against common colds is

primarily to avoid other people having colds, and to cultivate hygienic habits that will lessen the chances of the infection reaching the mouth and nose; secondarily to improve bodily vigor so as to increase our resistance to infection. It should be carefully kept in mind, however, that general physical vigor is no certain safeguard against most of the infections to which flesh is heir. The strong and robust are too often stricken down in the prime of life with scarlet fever, diphtheria and even with pneumonia, tuberculosis or typhoid fever, or some other infection of our long repertoire.

It is very much easier to tell a person what to avoid than to teach him what to do. We need constructive lessons in hygiene as well as in ethics. Seven of the commandments of the decalogue are negative. Almost all secular laws are negative. Jurists, learned in the philosophy of the law, tell us that it is important that laws should be thus limited so as to permit independence of action. The law may properly state what a person may not do but it should be careful in dictating what he must do. In hygiene and sanitation, however, we cannot be satisfied with this negative program for we now have sufficient knowledge to teach and guide the people in the positive art of hygienic living. Even the law, when applied to preventive medicine, recognizes this principle. "The liberty secured by the Constitution," says the Supreme Court of the United States, "does not impart an absolute right in each person to be at all times and in all circumstances wholly freed from restraint. Real liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own, whether in respect to his person or his property, regardless of the injury that may be done to others."

As soon as the sanitary sciences took a proud place among the exact sciences (with due apologies to mathematicians) the art of preventive medicine had its birth. Preventive medicine is an art based upon many sciences. It is an art that has reached the satisfactory stage when we are able to foretell many natural events in the epidemiology of disease with an accuracy not dreamed of by the prophets of old.

Other sciences and their arts have passed through the same evolution that is so evident in the history of sanitation. All science in its infancy and immaturity flounders and crawls in a negative nursery. The dawn of a positive pro-

gram foreshadows the day of useful achievements. Sanitary science has graduated from the kindergarten stage of negation and is now passing into the grammar grade of assertion. We are now witnessing a remarkable renaissance in every science, resulting in a transitional period of progress which characterizes the promising though perturbing period in which we live. When the history of this period is written the historian will be embarrassed with a wealth of material progress along every line of human endeavor, but "when the last picture is painted, and the tubes are twisted and dried," one achievement will stand out clearly above all the rest, and that one is the conquest of disease.

SOME HYGIENIC FALLACIES.

The new hygiene has given us an entirely different conception of many of the factors that enter into health and disease. It has exploded many a world-old fallacy. We know, for example, that there is practically no more danger from sewer gas than the farmer subjects himself to on his manure pile. The old bugaboo of sewer gas dies hard. People have always, and still, naturally cling to the notion that anything that smells bad must be detrimental to health. Science has demonstrated that our sense of smell is a poor sanitary guide. It is certainly absurd to accuse the odors from plumbing of being the source of diphtheria, typhoid fever, scarlet fever, sore throat, or any other infection.

Fomites or inanimate things were formerly supposed to play a large role in the transmission of infection. We know that in fact this occasionally happens, especially with diseases spread through discharges from the mouth and nose. Instead, however, of accusing letters, books, umbrellas, walls, furniture, merchandise, and other unlikely things, which were formerly disinfected or destroyed, we now think of objects recently moistened with saliva, such as drinking cups, pencils, toys, as well as food, fingers and flies. Yellow fever was believed to be transferred by a great variety of objects—coffee sacks, mattresses, a tress of hair, cigarettes smuggled in the false bottom of a trunk, were all accused of starting epidemics before the researches of Reed, Carroll, Lazear and Agramonte. Many of our former sanitary practices now seem absurd in the light of present-day knowledge. While quarantine officer in Havana, I disinfected, in accordance with the government

regulations, and by order from my superior officers in Washington, every letter that left the island, as well as great quantities of wearing apparel, and other articles suspected of carrying the virus of yellow fever. I even used to disinfect the ballast of wooden vessels, and in the case of rock ballast, dipped every stone separately into a tub of bichloride of mercury for fear that some small facet would escape purification. Again, while quarantine officer in San Francisco, before the knowledge that rats and fleas are the chief agent in the spread of plague, I used to disinfect great quantities of foodstuffs and merchandise, which was the best we knew in those days. I well remember how the merchants objected to having certain Chinese fruits dipped in formalin. When, however, we discontinued the process as useless there was still greater objection because the merchants had discovered that the formalin treatment helped to preserve some of these perishable goods for a considerable period of time.

Many a person obeys the call, "back to nature" with direful results, for when he gets in nature's solitude he thinks he can disregard nature's law. Sanitary habits are quite as important in the wilds as in the tenements. It especially grieves the heart of the sanitarian to note how frequently people contract typhoid fever at country, mountain or seashore resorts. The excess of typhoid fever in the autumn now goes by the special name of "vacation typhoid." The insanitary conditions found in many sparsely settled communities temporarily occupied during the summer season often challenge the conditions found in military camps during the bow and arrow age. Before people leave the sanitary security of a well-guarded city for vacation grounds, they should demand a bill of health from the health officer.

Sometimes science will change our views in a revolutionary manner, but these altered views may not materially change the practice of our art.

Thus our entire conception of ventilation has changed, owing to the fact that we now do not believe that fresh air is particularly necessary in order to furnish us with more oxygen or to remove the slight excess of carbon dioxide. It is plain that it is heat stagnation that makes us feel so uncomfortable in a poorly ventilated room rather than any change in the chemical composition of the air. It has been made per-

fectly clear from the work of Flügge that one of the chief functions of fresh air is to help our heat-regulating mechanism maintain the normal temperature of the body. It is necessary to have some 2,000 to 3,000 cubic feet of air an hour to maintain our thermic equilibrium—just the amount that was formerly stated to be necessary to dilute the carbon dioxide and supply fresh oxygen. The practice of ventilation, therefore, has not altered so much as has our reason for attaching importance to clean, cool, moving air, which has completely changed.

One of the fallacies that has fallen is the relation of the air to the spread of infection. The virus of most communicable diseases was believed to be in the expired breath, or exhaled as emanations of some sort from the body. These emanations were said to be carried long distances—miles—on the wind. The easiest, and therefore the most natural way, to account for the spread of epidemic diseases was to consider them as air-borne. Now-a-days the sanitarian pays little heed to infection in the air except in droplet infection, and the radius of danger in the fine spray from the mouth and nose in coughing, sneezing and talking is limited to a few feet or yards at most. The more the air is studied the more it is acquitted as a vehicle for the spread of the communicable diseases. It was a great surprise when bacteriologists demonstrated that the expired breath ordinarily contains no bacteria.

Most microorganisms, even if wafted into the air soon die on account of the dryness, and especially if exposed to sunshine. The relation of the air to infection is nowhere better illustrated than in the practice of surgery. At first Lister and his followers attempted to disinfect the air in contact with the wound by carbolic sprays. Now the surgeon pays no heed to the air of a clean operating room, but ties a piece of gauze over his mouth and nose, and also his hair, to prevent infective agents from falling into the wound from these sources. A similar revolution is recorded in almost every chapter of the great book of preventive medicine. With this increase of knowledge has resulted a corresponding increase in efficiency. We are now enabled to apply our preventive measures with an assurance of success not hitherto possible. It is quite easy to work in the midst of a raging cholera epidemic without contracting the disease, this was clearly shown in Hamburg in 1892. It is

still easier to nurse and attend patients with smallpox without taking the infection. A well-screened yellow fever hospital is the safest place in an outbreak, as was demonstrated during the last epidemic in New Orleans in 1905. It is quite practical with bacterial vaccines to raise our immunity to typhoid fever, plague, and a number of other infections. Still better perhaps, the methods of a clean hygienic life are better understood than formerly.

Milk is responsible for outbreaks of typhoid fever, scarlet fever, diphtheria, septic sore throat, and is also responsible for a certain amount of tuberculosis and infantile diarrheas. These facts make it quite certain that many diseases formerly attributed to pollution of the soil, to effluvia from broken drains or some other indeterminate cause, were in reality due, in part at least, to impure milk. Milk, then as now, must have been a factor for the spread of the agents of infection. It took a long time to find out that these infections may be transmitted in milk and that the danger may be neutralized by such a simple, harmless and efficient process as pasteurization.

Many people delude themselves with the false hope that there is some drug to cure every disease. Specific remedies may be counted on the fingers of our hands. Very few therapeutic agents rival quinine for malaria, salvarsan for syphilis, or antitoxin for diphtheria, but even these must be properly administered in order to obtain satisfactory results. The common belief that there is some drug that will cure every disease is fostered by unscrupulous persons who boldly advertise "sure cures" for rheumatism, pneumonia, cancer, tuberculosis, diabetes, and Bright's disease. These fallacies quickly disappear when people become better informed as to the limitations of the pharmacopoeia—quackery will then be less prosperous.

Many other fallacies are fostered. The ozone myth is one of them. Ozone is an irritating and poisonous gas. It conceals faults in ventilation while not correcting them. Ozone will destroy mammalian life more quickly than it will destroy bacterial life, hence it has no useful disinfecting power in occupied rooms. The sanitarian classifies ozone as a poison, not as a purifier, and believes that the recent ozonizing machines advocated for offices, schools, theaters, and other places, are probably injurious.

All those who have given thoughtful study to the pure food situation as it now exists are agreed that the pure food question is an economic rather than a health problem. To discuss this and other fallacies would require endless time. Only a few are mentioned as examples.

A deeper insight into the causes and method of transmission of disease has robbed infection of the terror with which the dread of epidemics once staggered mankind. For graphic descriptions read Defoe's "Journal of the Plague," or S. Weir Mitchell's "A Red City." It is difficult for those who have not witnessed the panic of a fever-stricken city to realize the terror, the flight, and the paralysis of trade, all due to a helplessness and hopelessness, the result of ignorance. Knowledge has therefore given us confidence that has conquered a fear of infection as supernatural and has mastered a superstitious dread of its mysteries. This conquest is one of the milestones which marks the advance of mankind.

CONQUEST OF THE FEAR OF THE SUPERNATURAL.

It is difficult to measure the advance made by mankind; in fact it is even doubted whether man has made any real progress since the dawn of written history. I am optimistic enough to believe that man has made great strides physically, mentally and spiritually.

Physically man is better off on account of a better understanding of the world in which he lives. Mentally he is superior to his remoter ancestors on account of a clearer understanding of truth and how to find it, and both these facts have greatly influenced the spiritual yearnings that distress every soul.

We no longer personify everything about us with a childlike anthropomorphism, although there is still a universal tendency among mankind, as pointed out nearly one hundred years ago by David Hume, whose philosophy gains strength with advancing age, to conceive all beings like ourselves, and to transfer to every object those qualities with which we are familiarly acquainted. We now look out into the world unafraid, and with a faith born of a knowledge of nature and her laws. The scientific spirit has freed us from the trammels of tradition; to-day we boldly investigate even, with public approval, forbidden subjects of yesterday.

It is so plain to us now that the length of a vibrating string determines the sound it produces

that it is difficult for us to put ourselves in the place of those who formerly thought that they heard the voice of Eolus. We know the lightning is not the wrath of Jove; the eclipse is not a shadow of portending evil, and the wind "bloweth where it listeth" on account of differences in weight between cold and warm gases. Knowledge has begotten wisdom, and wisdom has given us confidence that would have been regarded as rashness, if not impiety, in other days.

Best of all, perhaps, is that definite information concerning the agents of infection which at one stroke has taken them out of the supernatural.

The influence of some supernatural power with reference to disease still lingers in the minds of many who take the fatalistic attitude that if we are going to be sick we are going to be sick, and nothing that man can do will avert it. The very names of a number of diseases give sanction to this belief. Thus erysipelas was long called the St. Anthony's fire and scrofula the king's evil. Chorea is still called St. Vitus's dance. Persons with epilepsy or insanity were believed to be possessed of the devil, and many charms were worn to guard against the evil spirits, and many strange devices were used to dispossess them. There is an account of the plague in Rome about the time of Esculapius in which it is related that great fires were built in the streets, and a great noise was made in order to frighten away the demons. The plague, in fact, soon ceased, but we are now inclined to think it was because the fires and alarm scared away the rats rather than the evil spirits.

The fatalism that still binds the minds of men was well shown in the hookworm campaign. The greatest barrier met with in eradicating hookworm disease was the prejudice and ignorance of the people and profession. Until this was overcome the measures to help the infected people were fruitless.

A knowledge of the natural history of disease has drawn the teeth of many an ancient mythical demon. Certain diseases recur annually like the deciduous plants. We have our annual crop of typhoid fever just as we have our annual crop of thistles; we have tuberculosis perennially just as we have the evergreen firs and balsams. The appearance and disappearance of some diseases can be predicted with the same certainty as the seasonal appearance and disappearance of plants. Epidemics of measles in Richmond, Va.,

have been foretold with the same certainty as the decline of water-borne typhoid fever in Pittsburgh.

Formerly, when yellow fever broke out in our southland, the fever-stricken city was paralyzed both with fear of the disease and with the terrors of a shotgun quarantine. Now, yellow fever cases arriving at Havana are fearlessly carried through the city to Los Animas Hospital. We need no longer fear plague, typhus fever, relapsing fever, and other maladies in the way they once terrorized a less informed and less sanitary age.

The definite knowledge concerning most infections and the natural laws governing their transmission has given us a confidence that has properly robbed these diseases of the supernatural dread which once invested them. We know that the inscription "Died by the grace of God" on many a tombstone, should read: "Died by the disgrace of infected milk,"—or polluted water, or some other preventable factor.

Every scientific discovery contributes to the physical, intellectual and moral betterment of the world, but the discoveries in preventive medicine have made the lot of man so much easier, and this life so much safer, that he has more time than ever to think of his neighbor and to share his blessings with him. More than this, preventive medicine has quickened the coming of the brotherhood of man, for it has pricked his conscience in an extraordinary way.

A SANITARY CONSCIENCE.

One of the most remarkable developments of this age in which we live is the awakening of a sanitary conscience. It is a new thought in the minds of many a man that the care of the body and cleanliness of surroundings is a very considerable factor in the comfort, safety, and even the life and health of their fellowmen. The sense of moral goodness which comes from a clean and hygienic life is part of the doctrine of sanitary righteousness. Preventive medicine teaches that we must not only safeguard our own bodies against infection, and keep our own surroundings clean for our own sakes, but quite as much for our neighbor's sake. It teaches the lesson of the unselfishness of community interest and has been a potent biological factor which underlies the present trend towards socialism. One man alone cannot fight the fight against the common foe—infection; it takes the combined and intelligent cooperation of the community.

One of the best instances that comes to mind is the case of vaccination for smallpox which was the first and remains one of the great achievements in preventive medicine. Vaccination affords a high degree of protection to the individual and a well-nigh perfect protection to the community. Vaccination and revaccination systematically and generally carried out will completely erase smallpox from a nation. In other words, while the individual protection is not always perfect, the communal protection is absolute. To remain unvaccinated, therefore, is selfish in that by so doing a person steals a certain measure of protection from the community on account of the barrier of vaccinated persons around him. In England the Conscience Clause permits many persons to remain unvaccinated because the law exempts persons whose religious scruples forbid compliance therewith. Our own Supreme Court wisely forbids any such exemption in states having vaccination laws.

No man has the right to endanger his fellowmen with infection any more than he has the right to endanger them with physical injury. The Supreme Court of Minnesota, Dec. 23, 1910, in the cast of a waterborne outbreak of typhoid fever, held that "the state is liable if damages can be proved." This decision places the responsibility where it should be. Citizens are evidently as much entitled to reasonable sanitary protection as they are to police protection, or to protection from accidents at grade crossings. It is a fortunate day for preventive medicine when the principle is recognized that sanitary negligence is just as culpable as the negligence which fails to place a red flag by day or a red lantern by night to guard against a pitfall in the public highway. Returning again to vaccination, we find that the experience of over one hundred years clearly demonstrates its benefits, and we see that Germany has taught the world how to apply the known facts. If the entire world would follow the example of Germany then Thomas Jefferson's prophecy to Jenner that "future nations will know by history alone that the loathsome smallpox has existed and by you has been extirpated," would soon be fulfilled. Sanitarians know that it would be much simpler to render smallpox extinct than it was to stamp out yellow fever from the Canal Zone.

In the case of rabies we have another instance in which the sentiment or selfishness of man permits his fellows to suffer from preventable

disease. A better understanding of the facts will soon make it plain that death from hydrophobia is as unnecessary as death from an unprotected cogwheel. England has eliminated rabies, and Australia has kept it out through muzzling ordinances and quarantine on dogs. Muzzling temporarily inconveniences the dogs but in the end protects dogs as well as man and other animals from this communicable infection.

The laws of biology have a direct bearing upon our daily life, and a correct understanding of these laws helps us not alone to a longer and healthier, but to a better life. Many ethical questions that trouble our complex age can also be solved by an intelligent understanding of biology, just as many material questions relating to health and disease depend upon a deeper insight into the medical sciences.

All enduring progress must be based upon morality, but our very interpretation of morality, as it influences our conduct of life and our relations to our fellowmen, is based upon, and guided, in no small degree by a correct understanding of the world about us. It is plain to the student of biology that the rich harvest of facts garnered by the experimental method in all the fields of science during recent years has gradually but inexorably impressed itself upon the changing code of ethics of all civilized nations. The criminal of yesterday derided and jailed is the patient of today sent to the hospital for treatment, the vicious individual or the incompetent moron is not now regarded as deserving the finger of scorn so much as he is entitled to the humanity that recognizes the condition as one of imperfect protoplasm, caused by a natural limitation due to hereditary faults in his ancestors; the insane are no longer laughed at as bewitched, but treated with a consideration and humanity based upon a clearer understanding of their diseased states. How different all this is from the time audiences roared at the antics of King Lear as a comedy character, and people visited Bedlam as a source of amusement. A drunken character on the stage is no longer greeted with peals of laughter, but with a feeling akin to sorrow and disgust. We no longer declaim that all men are created free and equal, for we know that they are bound by their protoplasmic makeup, and unequal in their powers and responsibilities.

The responsibility of individuals and the limitations of an imperfect human machine are much clearer to us than formerly. Infection is no longer regarded as a punishment for sin, or even sin itself, much less a supernatural visitation, but simply a conflict between two beings, one the host and the other the parasite. In one sense this conflict, though less obvious, is not essentially different from the conflict between a rattlesnake and his prey. The battle between host and parasite results in a reaction in the host and this reaction we call an infectious disease. The various elements which make up this conflict, such as the mode of attack of the parasite and the means of defense of the host, have been carefully studied. A sharp defense on the part of the host will sharpen the claws of the parasite in accordance with the laws of the survival of the fittest, and thus increase the reaction or the intensity of the disease. If the parasite is unduly aggressive and virulent, and thus kills its host too quickly, it defeats its own object, for the parasite is in the position of the rats on a ship. It serves small purpose to scuttle the ship unless there is some means of passing to another ship. The mode of transference of the parasite is therefore of vital importance to the parasite, and of great practical concern to the host. The infectious diseases, then, represent only one phase in a complex series of events in which parasite and host are inter-related, not only as rats on a ship, but as seed and soil.

The cornucopia of preventive medicine is not overflowing but is filling up with blessings of various sorts. One of the most important when gauged by practical results is a better understanding of the sources of infection and their modes of transference. It is much more important for the health officer to know the ways in which the virus is transmitted from one person to the next than to know the causes of disease. Thus with yellow fever we are enabled to prevent it or check an epidemic, although still ignorant of its cause.

SOURCES OF INFECTION AND MODES OF TRANSFERENCE.

There are two great sources of the communicable diseases of man, viz.: man himself and the lower animals. Most of the communicable diseases of man, especially those which occur in epidemic form, are peculiar to man. This is the case with typhoid fever, cholera,

leprosy, malaria, yellow fever, syphilis, mumps, measles, scarlet fever, typhus fever, infantile paralysis, cerebrospinal fever, smallpox, chickenpox, relapsing fever, dengue, and even tuberculosis in large part. It is quite true that some of these infections may be communicated to the lower animals under experimental conditions, but they do not, as a rule, occur in them under natural conditions. In other words, most of the communicable diseases from which man suffers are specific; the degree of specificity varying slightly with the different infections.

It is, therefore, plain that man is the great source and reservoir of human infections. Man is man's greatest foe in this regard. The fact that most of the communicable diseases must be fought in the light of an infection spread from man to man is one of the most important advances in preventive medicine. This new thought has crystallized out of a mass of work in the sanitary sciences during the past decade, from researches upon tuberculosis, typhoid fever, cerebrospinal meningitis, and other communicable diseases. Formerly sanitarians regarded the environment as the main source of infection. We now know that water, soil, air, and food may be the vehicles by which the viruses of the communicable diseases are sometimes transferred—that is, they are media of conveyance rather than sources of infection. Most of the microorganisms causing the communicable diseases of man are frail and soon die in our environment, as in the air, soil, or water. Most of them are obligate pathogens and cannot or do not grow or multiply in our environment.

From the lower animals, particularly the domesticated animals, man contracts a number of infections. Thus we contract rabies from dogs; plague from rats; glanders from horses; trichinosis from hogs; Malta fever from goats; anthrax and foot-and-mouth disease from cattle; tuberculosis, in part, from cattle; tapeworms and other animal parasites from the meat of fish, fowl and mammals. Various skin parasites are also contracted from the lower animals as ringworm from cats. The number of diseases, however, contracted from the lower animals, and the extent of their ravages are notably less than those contracted from man himself.

The knowledge that most infections are spread rather directly from man to man combines the forces of sociology with those of preventive medicine. The task of preventive medicine is

thereby rendered much more difficult from the fact that the control of most infections depend upon the control of man himself. The elimination of smallpox, and that still worse plague, the great pox, illustrates the well-known principle in preventive medicine that it is much more difficult to control a disease transmitted directly from man to man than a disease transmitted by an intermediate host or one contracted from the lower animals, or one transferred to us from our environment. We have a certain amount of control over our surroundings, and we have dominion over the lower animals, but the control of man requires the consent of the governed. Thus it is easier to stamp out yellow fever than to control typhoid fever. It is easier to suppress malaria than tuberculosis, rabies than influenza, trichinosis than syphilis.

Cattle appear to be mutely thankful when protected by inoculation against blackleg or anthrax, but man rebels against one of the best of all specifics—vaccination against smallpox. The fact that man is the chief source and reservoir of most of his own infections adds greatly to the scope and difficulties of public health work and often makes the prevention of disease depend upon social changes. In this sense preventive medicine has become one of the important factors in sociology.

The agents of infection may take various routes of transference from man to man or from animal to man. These routes are spoken of as the modes of infection, the modes of transference, or sometimes as the vehicles of infection. Formerly they were spoken of as the "channels of infection," but now we restrict that term to the special channel by which the infection enters the body. Thus the channel of infection in tuberculosis may be respiratory tract, the digestive system, or the skin; whereas the mode of infection is from tuberculous sputum, either by direct contact, by droplet infection, or through milk or some other medium of conveyance.

The modes of transference may be grouped, for convenience, under three general heads: (1) direct, (2) indirect and (3) through an intermediate host. In the great majority of cases, however, the virus is transferred more or less directly by what is now known as contact infection. In many instances the virus is transferred indirectly through water, food, soil, air, etc. In a large group of diseases the transfer is through an intermediate host which furnishes

the growing list of insect-borne diseases. The above facts bring out a significant distinction between hygiene and sanitation.

HYGIENE VS. SANITATION.

We now know that purifying water and pasteurizing milk will decrease but will not delete typhoid fever. Residual typhoid fever must be fought in the light of an infection spread from man to man, that is, in the light of a contagious disease. It has often been said that typhoid fever is infectious but not contagious. There is much mischief in that statement for it is clear that typhoid is both contagious and infectious, or, as we prefer to say, communicable. These words, "contagious" and "infectious" are popular terms lacking precise definition, and the distinction serves no useful purpose. Contagious diseases may be infectious and infectious diseases may be contagious. The distinction is artificial and should be dropped.

Modern science teaches that tuberculosis is both contagious and infectious, but not hereditary, as was formerly supposed. Tuberculosis is an example of a disease that must be fought along both hygienic and sanitary lines, that is, hygienic living to improve the resistance against the infection and sanitary habits and surroundings to diminish the chances of contracting the virus.

A distinction is therefore growing up between the old terms "hygiene" and "sanitation" which are the Greek and Latin equivalents for health. More and more are we limiting the word "hygiene" to the person, and "sanitation" to the environment. Hygiene is personal, sanitation impersonal. Thus we speak of the hygiene of the school children, but the sanitation of the school buildings. We speak of the sanitation of the Panama Canal Zone, but the hygienic condition of the workers. Before the present renaissance of the sanitary sciences these two terms "hygiene" and "sanitation" were used more or less interchangeably. The distinctions are growing necessary as a result of our enlarged knowledge.

CLEANLINESS THE HEART AND SOUL OF SANITATION.

Although science has shown the increased importance of a personal hygiene it has not diminished the value of impersonal sanitation. Environment has been shown to have very little to

do with the spread of a large number of diseases of which scarlet fever, diphtheria, whooping-cough, measles, smallpox, syphilis, mumps, cerebrospinal fever may be taken as examples. In view of these facts there has been a tendency on the part of some health officers to exaggerate the importance of the person in the transfer of disease, and to neglect the environment. There is a large and important group of diseases in which the care and cleanliness of our surroundings are of great concern. This class is represented by those infections spread by the alvine discharges, such as typhoid fever, cholera, hookworm disease, dysentery, and others caused by intestinal parasites. These diseases were formerly called "filth diseases." That term is dying out since the domination of a personal hygiene over sanitation. At one time the conception of the filth diseases reached the dignity of a special name—the "pythogenic theory"—first propounded by Murchison in 1858. Although Murchison's conceptions were quite wrong, we should not forget that typhoid fever is really a filth disease—at least a filthy disease, because every case means that a short circuit has been established between the discharges from one person and the mouth of another.

The mistake should not be made that simply because dirt does not breed disease it may be neglected; because the filthy garbage can does not emit diphtheria it may be tolerated, and because the foul odors from decomposing organic matter do not carry with them the effluvium of any known disease, they may be permitted. No mistake could be greater. Cleanliness is still next to godliness and is just as important from the standpoint of personal hygiene as ever. Cleanliness of mind and body, cleanliness of home and surroundings, cleanliness of city and country, cellar and garret, wharf and shop, markets and roads, cleanliness of the air we breathe, water we drink, food we eat, and habits we cultivate, are the substantial foundation blocks for an enduring structure of preventive medicine. The dearly bought experience of the ages has taught mankind the lesson that cleanliness makes for health, while the reverse encourages disease. Only two years ago a well directed and energetic sanitary campaign practically abolished typhoid fever from Yakima county, Washington, where the disease was unduly prevalent, simply by a "general cleaning up." This demonstration was one of the great object lessons in modern sanita-

tion that has not been given the attention it deserves.

Our conception of cleanliness has greatly changed with our advance in knowledge of the kinds of dirt, the degree of dirtiness, and the nature of these dangers. We can no longer be satisfied with visible or aesthetic cleanliness, but must insist upon biological cleanliness. A tetanus spore upon the shining blade of a surgeon's knife makes that instrument filthy, whereas many such spores on the skin of a chicken may be harmless when ingested. We cannot see the infection upon the common drinking cup, upon the roller towel, upon the point of a pencil that has just been moistened with saliva, or in water, milk, or food, although we well know the danger of such invisible "dirt" that these objects harbor.

It requires the bacteriologist to tell the difference between clean dirt and dirty dirt. We lack a sixth sense, or microscopical eye to see and distinguish the harmful germs. Furthermore, cleanliness, in the modern understanding of the term, involves the absence of flies, fleas, mosquitoes, bedbugs, lice, rats, mice, and all sorts of vermin. We must therefore practice scrupulous cleanliness and educate the people to the biological meaning of this term. Long experience has taught the lesson that cleanliness offers a meed of protection against disease, that clean surroundings are apt to be free from infection, and that clean food is apt to be safe food.

Before the rise of a personal hygiene the health officer was a general scavenger. His chief duty was to abate nuisances, collect garbage, inspect plumbing, and look after pest-houses and lazarettos. The sanitarian now knows that rubbish, manure and organic wastes of all kinds are not sources of infection, although they may favor the spread of infection. Vermin breed and feed where dirt of this nature is tolerated. Rubbish in vacant lots, or back yards, in alleys, in cellars, garrets, and other places may, therefore, be taken as an index of the failure to appreciate the modern teachings of hygiene and sanitation. One of the most pernicious results of dirt is dust. Dust is irritating and injurious. Dusty roads, dusty houses and dusty workshops mean dirt and neglect. Some kinds of dust are more trying than others, but all kinds are injurious.

Fresh air and sunshine are natural aids to cleanliness. They destroy infection and purify surfaces. As surface disinfectants, fresh air, sunshine and cleanliness rate higher in the opin-

ion of most sanitarians than the usual germicidal gases used to fumigate a room.

The subject of cleanliness cannot be left without a word about decency as applied to hygiene and sanitation. The health officer is no longer swayed by sentiment, but guided by facts. Nevertheless, sentiment cannot be disregarded in sanitation any more than we can banish music, or beauty of form and action from the heart of man. The sanitarian frowns upon many things which he knows may not be particularly harmful. If dried figs contain a few worms they pass muster, but if they contain many they are condemned for decency's sake; the other day our State Board of Health condemned a lot of foodstuffs that had been in cold storage over a year, not because they thought the food particularly harmful, but an unnecessary practice and one fraught with potential danger however slight, in other words, contrary to public decency. We now no longer think it decent to drink water containing sewage, even though boiled. Filtration will strain out the infection but will not eliminate the dissolved chemicals. It took mankind a long time to awaken to the fact that the inexpressibly nasty habit of drinking water polluted with sewage was not only not nice, but dangerous. In Italy the signs in the railroad carriages read: "for hygiene and decency do not spit." The moral is obvious.

It would be impossible for the present-day sanitarian to improve upon the oft-quoted sentence, "cleanliness of the person is the threshold to cleanliness of the soul, and hence the door to righteousness." We need only to refer to the levitical laws to become impressed with the fact that the practical value of cleanliness is not a new thought. Thus we read in Deuteronomy "thou shalt have a place also without the camp whither thou shalt go forth abroad, and thou shalt have a paddle upon thy weapon and it shall be when thou shalt ease thyself abroad though shalt dig therewith and shalt turn back and cover that which cometh from thee." This is an instinctive act among animals, and may be seen daily in the habits of the domestic cat. Even wild animals take the greatest pains not to foul their nests, yet how different it often is with man in a civilized state. Formerly man literally lived on a dung heap. If the above primitive injunction concerning camp sanitation had been followed by our troops in the Spanish-American war it would have saved thousands of cases of

sickness and death from typhoid fever. The statistics show that about one-third of our entire command in that war contracted this filth disease and largely because proper precautions were not taken concerning the disposal of excreta. During the recent flare-up in Mexico our troops were concentrated on the border near San Antonio in Texas. This command, known as the Texas manoeuvre division, consisted of about 20,000 officers and men, and among them were only two cases of typhoid fever. This was in part due to the fact that practically all the officers and men were vaccinated against typhoid, but this alone by no means explains the freedom from the disease, for in addition the camp was a model of cleanliness and sanitation.

Concerning bacterial vaccines, a warning is necessary. The sanitarian welcomes every specific therapeutic agent as he welcomes anything that helps check the prevalence of the communicable diseases. He doubts, however, the advisability of artificially raising immunity by means of bacterial vaccines as a wise measure for the population at large. Persons who have to visit a city during a typhoid outbreak, or physicians, nurses and ward tenders in the typhoid wards of hospitals, or travelers in a country where typhoid is endemic, or soldiers in a camp, or persons unduly exposed, should protect themselves with typhoid vaccine. The immunity thus produced, however, does not permit them to heedlessly disregard the rules of sanitation and hygiene. The sanitarian believes that it would be much better to fight typhoid, and tuberculosis too, along the lines of hygiene and sanitation even though it may take a long time to conquer these infections, but once conquered along these lines the victory will be enduring.

SANITARY ISOLATION.

Sanitary isolation is an impossibility. Any system of quarantine that attempts to protect with a Chinese wall is doomed to fall. Massachusetts might today free itself of measles or tuberculosis, but tomorrow it would become re-infected from neighboring states. Infection flows from the country to the city, therefore no city is safe with infected suburbs, or especially with infection upon the drainage basin from which the water supply is obtained, or upon the milk drainage area. Germs are social climbers and find their way into the palace on the

plaza or the castle on the crags. We can place a social guard at our front door, but there is no sanitary watchman to protect the back door. A typhoid bacillus does not ride up with a footman and livery and announce his call with his name emblazoned on a visiting card. He may come unannounced into the best ordered house in a bottle of milk, or in the person of a housemaid or workman. So long as slums are permitted and crowded tenements are tolerated, those who live on the boulevard are not safe.

Man's protection of his fellowmen has therefore become a matter of individual concern. It is not only a question of self-preservation, but the health and happiness of those near and dear. Man's sanitary duty to his fellowmen answers the question: "Am I my brother's keeper?" Formerly each individual or each community heedlessly allowed its sewage to run into the stream, without a thought of those who drank the water below. Cities upon lakes emptied their sewage into the lake and took the diluted sewage at another point close by. Today a man's sanitary conscience should not allow him to defile the stream. If his sanitary conscience does not prick him then the sanitary police should compel him to have a due regard for the rights and safety of others.

The discovery of carriers has increased the difficulty of sanitary isolation. In many diseases carriers are more numerous than the cases. This from 2 to 4% of all cases of typhoid fever become carriers. In cerebrospinal fever the carriers outnumber the cases 10 to 1. It is believed that the missed and abortive cases of infantile paralysis are much more numerous than the paralytic cases so easy to recognize. The carrier problem has greatly complicated the program and renders the process of eliminating certain infections complex and difficult. There is, however, reason to believe that the time will soon come when carriers will be cured, and, better still, we know that many of them can be prevented by early recognition of the case and intelligent isolation of the patient. Every case of infectious disease known is a case neutralized, and experience teaches that the number of carriers diminishes in a community *parri parsu* with the decrease in the number of clinical cases. Isolation with all its imperfections and disappointments will continue to remain an important measure to check the spread of infection.

Sanitary engineering works, especially those involving disposal of sewage and wastes, purification of water or drainage of land, require a large outlay of money. The expenditure, however, is economical in the light of the benefits derived. The sanitarian knows no greater extravagance than the false economy in matters of this sort. Communities are gradually awakening to the fact that these things pay. A healthy city attracts trade and travel, and people are now rightly demanding a clean bill of health from communities with which they have personal commerce. Public health is purchasable; within natural limitations a community can determine its own death-rate. It seems strange that such an intangible and mysterious quality as health, long regarded as a gift of God, should become a commercial article to be bartered in our legislative halls.

Legislators often do not heed the demands of the few for a number of reasons. Science has run ahead of public health administration by leaps and bounds, so that there has been more than the usual lag in the diffusion of the new knowledge. Again it is difficult for legislators to winnow the wheat from the chaff out of the harvest of novelties, half truths, theories, and speculations that fill the barns of the experimenters. Furthermore, science deals only with cold facts and will have nothing to do with emotions, institutions, instinct or other categories that philosophers make so much of. The very fact that science limits itself strictly to facts that may be measured or weighed is at once its strength and its weakness. Man is not simply made up of a material aggregation of matter, and therefore the discovery of a method of preventing or curing disease cannot always be applied immediately. There are many complicating factors between the discovery of a new fact and its practical application.

For example, we have sufficient information to stamp out hookworm disease, malaria, beriberi, and many other afflictions, but they continue and are likely to continue to decimate the ranks for many generations to come. When Ronald Ross had worked out the life history of the malarial parasite in the mosquito he broke out into song:

"I know this little thing
A myriad men will save.
O Death, where is thy sting,
Thy victory, O grave."

But although we know the cause of malaria, its mode of transmission, and although we know how to prevent it and even possess a cure, the disease still counts its victims by the hundreds of thousands annually.

Tuberculosis offers another illustration in which many complicating factors have made its control a sociologic and economic rather than an exclusively medical question. We can preach and teach all we want about the importance of fresh air, sunshine, good food, rest and recreation, but until justice takes the place of charity, many of these things will remain beyond the ability of most men to purchase. The rich man can determine his hours of work and play, can travel in quest of change and climate, can afford nourishing food, well cooked, and can readily obtain many other hygienic necessities that were formerly regarded as luxuries. The poor man must accept conditions much as he finds them, and if overwrought and underpaid he cannot effectively guard against tuberculosis. In this sense the rich man can purchase health and life itself, and in this sense tuberculosis and also infant mortality have become class diseases. Science has pointed the way; it remains for society to apply the remedy.

It has been made plain that it is going to take a long time to greatly diminish the prevalence of tuberculosis. Patience, therefore, is one of the virtues that the health officer must possess and teach.

TRAINED LEADERSHIP.

Health administration in this country lags largely for want of trained leadership. The call to public health is loud and clear. Preventive medicine is the watchword of the hour and the people are asking: "If disease is preventable, why is it not prevented?" They are not satisfied with promises, but demand results; this is as it should be. It is now recognized that the orthodox training leading to the degree of M. D. does not necessarily fit a man for the position of health officer. The average practitioner learns little concerning vital statistics, sanitary engineering, water purification, sewage disposal, disinfection, forensic medicine, and the making and breaking of health laws. The public health officer looks upon disease in the large, and is less interested in the individual case, which is the chief concern of the practicing physician. The health officer looks upon disease with an

eye to preventing its spread—in order to do so he must know its mode of transmission. The practicing physician, on the other hand, looks upon disease with a view to affording relief or cure and his principal interest, therefore, is in diagnosis and treatment. The public health officer must also be a specialist. Public health administration is, indeed, a profession which bends its knee to none, so far as ideals and service are concerned.

It must not be understood that the health officer is concerned only with stamping out the communicable diseases. There are many preventable defects which may be reached especially in school children, and there is the general conduct of life which makes not only for longevity but for maximum efficiency. The present-day health officer must also concern himself with the problems of heredity and eugenics. He must further concern himself with questions of immunity, and must make every effort to help the conditions which menace work-people. Industrial hygiene and the diseases of occupation form a large and important chapter in the volume of preventive medicine. Furthermore, the people must depend upon the health officer to guard the quality of the food, including the purity of the milk, and the cleanliness of the water which they consume. The health officer must therefore be familiar with the sanitary sciences in addition to the medical sciences, both of which, in the broad biological sense, underlie the foundation of successful health administration.

In order to meet this demand for trained leadership, Harvard University and the Massachusetts Institute of Technology have established a School for Health Officers. Other universities, notably Pennsylvania, Wisconsin, and Michigan have likewise established courses to train men to officer the public health militia.

Politics have been a curse of health administration in this country. Politics and sanitation do not mix. One of the important things is to divorce the two. Only those should be appointed to the position of health officer whose training adequately prepares them for the work. Such persons should be given compensation commensurate with their great responsibility, and the tenure of office and other conditions should be attractive so as to induce competent men to enter and build up the profession.

It is pleasurable enough to recount the progress of the sanitary sciences, but amid all the

great achievements we are not blind to the fact that many problems remain unsolved. Cancer and pneumonia still defy us—for how long who can say?—for many workers in many workshops are attacking these and other pathological puzzles with unremitting zeal. That they will be solved, and solved by the experimental method, is the firm conviction of those who are on the firing line.

The power we now possess to diminish or even conquer some of the communicable diseases has entirely overshadowed the importance of the non-communicable affections. It is quite as important to guard against organic disease of the heart, kidney, liver or brain as it is to guard against typhoid fever, tuberculosis, or smallpox. Furthermore, the object of preventive medicine is not alone to prevent infection or the premature occurrence of the degenerations which inevitably come with advancing years, but seeks to give each individual the maximum daily efficiency during his allotted lifetime. It is perhaps even more important to live efficiently than to live long. He who does nothing all his days but care for his body so as to prolong his life may neglect many material obligations and moral responsibilities. Therefore eugenics has become an integral part of the program of preventive medicine. In brief, the object of preventive medicine is not alone to live longer, for it serves little purpose to live longer if, at the same time, we cannot live healthier, happier and better lives.

In reviewing the successes of science we are not blinded by the glare of its glories. The progress has been satisfying, even brilliant, but only the surface has been scratched, and our ignorance of life and its laws remains abysmal. A clear knowledge of what we do not know is quite as important as a knowledge of what we do know. Formerly it took a bold man to peep into the darkness; now many a Columbus sails the uncharted seas with undaunted spirit, hoping to find a new continent, even though only searching a new route.

The limitations of the human mind, as well as the delinquencies and defects of the human body are brakes upon the wheels of progress.

The student of preventive medicine frankly faces the fact that the mass of mankind is diseased, ignorant, and unmoral.* He has dedi-

cated himself to the task of helping to cleanse, teach, and regenerate. Preventive medicine dreams of a time when there shall be enough for all, and every man shall bear his share of labor in accordance with his ability, and every man shall possess sufficient for the needs of his body and the demands of health. These things he shall have as a matter of justice and not of charity. Preventive medicine dreams of a time when there shall be no unnecessary suffering and no premature deaths; when the welfare of the people shall be our highest concern; when humanity and mercy shall replace greed and selfishness; and it dreams that all these things will be accomplished through the wisdom of man. Preventive medicine dreams of these things not with the hope that we, individually, may participate in them, but with the joy that we may aid in their coming to those who shall live after us. When young men have visions the dreams of old men come true.

Discussion was opened by Dr. Henry D. Holton of Brattleboro—I have the reputation of having lots of courage, and I don't know but I have just as much now as I ever had, but I haven't courage enough to attempt to discuss this elaborate paper, this scientific paper coming from the source of such authority. The gentleman who has been for years a member on Public Health Service. I do not think that all people know what that health service is. In 1879 Congress appointed a National Board of Health consisting of: Dr. Preston H. Bailhache, Dr. John S. Billings, Dr. Thomas F. Turner, Hon. Samuel F. Phillips, Dr. Samuel N. Bemiss, Dr. James L. Cabell, Dr. Charles F. Folsom, Dr. Hosmer A. Johnson, Dr. Robert W. Mitchell, Dr. Stephen Smith, Dr. Tullio S. Verdi.

Dr. James L. Cabell of Virginia was president, all were men of ability. I knew most of them, and by invitation attended one of their meetings when they were to consider the yellow fever question. Congress neglected to make the annual appropriation, hence the Board ceased to exist. The Marine Hospital Service gradually succeeded in securing appropriations, thus being able to extend its work, and by repeated acts of Congress has received authority to enlarge its usefulness and to have the name of the "Bureau of the Public Health Service." With its large appropriation it is probably the best equipped Public Health Service in the world. This paper which you have just listened to from Dr. Rosenau, an exponent of that service, comes from one who has had the training and the vast storehouse of experience which that service alone can give. In speaking of smallpox, not for the Board of Health, but for myself, I think the time will come before a great while when we will not have any quarantine for this disease. I don't think that we should have any quarantine. If you do not choose to be vaccinated you can have smallpox if you want it, and there is a possibility of your having it.

A great deal of progress has been made in the past few years. Why, I suppose I would be kicked out of the operating room if I should go down to New York and do what I did fifty years ago, when

*These concluding sentences are paraphrased from Victor C. Vaughan's admirable address on the "Philosophy of a Scientist"; *Science*, Aug. 23, 1912, N. S. Vol. xxxvi, No. 921, p. 225.

I used to assist Dr. Mott in his operations, and he was a very clean man. He used to say: "Mr. Holton, have you washed your hands?" and I had washed them a good many times pretty thoroughly, and he would say that five or six times; when we would get through he was very careful about the dressing of the wound so that it should be carefully brought together. Then he would say: "Mr. Holton, you put on those water dressings." What do you think those water dressings were? A piece of cloth, about three thicknesses, saturated with Croton water from the tap. Why, your surgeon here wouldn't let me look at a patient for fear I would be putting on such a water dressing, the result would be union by first intention. With regard to the quarantine of measles, scarlet fever and those diseases, we must educate people as far as we can with reference to the way they are communicated. It will take some time to do that. Whooping cough is one of the worst diseases we have. There are children going to school having a little cough, the mother says she doesn't think they have the whooping cough, and pretty soon the whole school has it.

I want to say that I believe thoroughly in the profession of Vermont. I know that the physicians of Vermont are careful men. They take precautions against the extension of diseases and in that way are helping on our State Board of Health. I thank you, gentlemen.

A DIPLOMA NOW REQUIRED OF MIDWIVES.

While it is undoubtedly true that the standard required of midwives is higher at present than it was several years ago, before the Department of Health took an active interest in its elevation, it must be confessed that the standard in this city left a good deal to be desired, and was much lower than that in many European countries. With the object of remedying this deficiency, the department has decided that in future it will require the presentation of a diploma or certificate showing that the prospective midwife is a graduate of a midwifery school before a permit to practice will be issued to her. The resolution embodying this intention was passed at a meeting of the Board of Health on the 14th day of October, 1913, and reads as follows:

Resolved, That the rules of governing the midwifery in the City of New York adopted by the Board of Health, November 8, 1907, be and the same hereby are amended, so as to read as follows; the same to take effect on and after the 1st day of January, 1914:

Rule 3. The applicant must be twenty-one years of age or upwards, of good moral character, and able to read and write. She must be clean and constantly show evidence in general appearance, of habits of cleanliness.

The applicant must also present a diploma or certificate showing that she is a graduate of a school for midwives registered by the Board of Health of the City of New York as maintaining a satisfactory standard of preparation, instruction and course of study, but the requirement of a diploma shall not apply to any person who is now or heretofore has been authorized to practice midwifery by the said Board.—*N. Y. Weekly Bulletin*.

PRESENT DAY DANGERS.

In his address before the Congress on School Hygiene at Buffalo, Dr. Charles W. Eliot, president emeritus of Harvard, calls attention to the detrimental effect on health of the progressive civilization of the last hundred years. Evidence of this is seen in the lowered vitality of city dwellers, in the diminishing size of families, in the increasing incapacity of many women to bear and nurse children and in the increase of the insane, the defective and the criminal. That civilization is preparing its own destruction is shown by the conditions existing in the great centers of population, where defect, disease and crime are seen in their most alarming and destructive form. The question of good breeding and the means by which it may be obtained is not easy of solution. Society must become more enlightened if the means of protecting civilization against its inherent tendencies toward decay and dissolution are to be developed. We must strengthen by every possible means the social consciousness toward putting into execution all available means of defense which ethics and the science of medicine recommend. Not much can be done with those who have reached adult life under present conditions. Hope lies with the children, and herein is the importance of a training which will render possible a saner and more wholesome hygiene both of body and mind.—*Boston Medical and Surgical Journal*, September 4, 1913.

A good food for sick babies is buttermilk prepared by adding about 40 grams of sugar and 15 of flour to the quart and boiling 10 minutes. It has a low fat content and lactic acid as a valuable ingredient.—*Medical Times*.

Vermont Medical Monthly.

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EDITORIAL.

The recently compiled and published statistics comparing the percentages of fatal hospital cases coming to autopsy in this country with that of foreign countries (Germany, Austria and England) has resulted in provoking much discussion on the subject. A difference ranging from 99.9% in the Allgemeines Krankenhaus of Vienna and 93% in the government hospitals in Berlin to 7.6% in the Boston City Hospital, the medical center of America, and a percentage so low that I do not dare quote it in the Vermont hospitals, is a condition worthy of much thought. Many elements have been suggested as contributing to these facts such as a peculiarity of our laws, the activity of the undertakers and funeral societies, the claims of the departments of anatomy, and inadequate hospital rules, etc., but when all is said and done, the writer is strongly of the opinion that the underlying fault of this lamentable paucity of post-mortems lies at the door of the American physician himself. The profession has failed woefully of its duty in this matter. It has been the writer's experience that a large num-

ber of the autopsies performed in hospitals and private practice have actually been requested by the patient himself prior to his decease or by the family. If the American doctor does not obtain the autopsies which he might, and for argument let us concede this, why is this so? Is he too indolent, too indifferent, or is he actually better satisfied not to have a final verification of his diagnosis? Probably all of these motives are operative. We are inclined to believe, as badly as we dislike to, that the average physician in this country is not at heart a true scientist. He fails to appreciate the real scientific spirit which will help the German to devote a lifetime to ascertaining the truth about some matter which in itself seems trivial in the extreme but which may add just the essential link to make a sum total of tremendous value. In America medicine is looked upon more as a trade, as a means of earning a respectable and in general, above-the-average income. If the physician can meet the symptoms of his patient in such a way as to relieve them and satisfy the patient that he is not being neglected and can avoid the criticism of the family, he is usually willing to fill out the final certificate with a diagnosis that is not too improbable. He says to himself, the patient is dead. What is the use of making any farther bother? He fails to appreciate that he may be saved from another possible error which might cost the life of some future patient, or that he may have the satisfaction of knowing that his diagnosis was correctly made and his treatment proper. The latter result will, of course, be the more satisfactory to him, but not necessarily of the greatest value. We learn most by our errors and be assured that the post-mortems will reveal plenty of these which would otherwise go undetected. This attitude on the part of the physician is not entirely a cowardly one, but it is rather one of indifference into which he has drifted and one which he sees his contemporaries occupying. The occasional au-

topsy which he does see may prove him in the wrong and he feels that it may arouse a suspicion among his clientele that he was uncertain about the case. He allows this possible contingency and his natural reluctance towards suggesting anything which he fears may be disagreeable to the bereaved family to weigh against the tremendous value to himself and hence to his future patients which would accrue to him by an increased number of post-mortems. Cabols series of 1402 autopsies showing a percentage of 39% errors in diagnosis and Baboons series of 2500 show a percentage remarkably similar.

A few hospitals in this country have adopted a rule demanding a signed consent to a necropsy as a condition to admission and have found that this does not decrease their applications for entrance, but this method would be entirely unnecessary if each physician would interest himself in his own cases sufficiently to actually wish a post-mortem. A tactful request with a candid explanation of the reasons for it would meet with ready consent in 75% of all cases and it is to the disgrace of the American physician that he is willing to go on in a slipshod way.

NEWS ITEMS.

Eighty billion malignant germs, bagged in the wilds of Ecuador and Peru, are being shipped to Harvard College, according to word received at Cambridge, Mass., September 29th, from Dr. A. W. Sellards, of Johns Hopkins University, and three Harvard professors who have just returned from their expedition to South America. They have successfully landed their prey in this country, duty free, as "South American curiosities," and have shipped them to the Harvard bacteriologic laboratory, where they will proceed to make a scientific study of the germs at short range. Among these are pellagra, oroya fever, yellow fever, bubonic plague, typhoid fever, a collection known as uta, which is really South American leprosy, and the dreaded black water fever.

The magnitude of the United States Government Meat Inspection Service is shown by the following figures covering the past seven years, the period during which the present law has been in effect: 792 slaughtering and packing plants are under observation in 227 cities. More than 377,000,000 animals were inspected at slaughter, of which 1,100,000 carcasses and 4,750,000 parts of carcasses were condemned. The reinspection of meat and meat food products in their various preparations amounted to 44 billion pounds, of which there were condemned on reinspection 148,000,000 pounds. There were certified for export 8 billion pounds.

The sum of \$100,000 was bequeathed the Worcester, Mass., hospital by the late Mrs. Katherine Allen.

The Extension Division of the University of Wisconsin has established a Bureau of Health Instruction for popular education in health and disease.

The St. Louis Medical Society receives \$50,000, minus several minor legacies, as a memorial for her son, from the estate of the late Mrs. Franziska Barscher.

Sibley Hospital, Washington, D. C., received \$50,000 as a gift from George O. Robinson, Detroit, Mich.

The late Harriet O. Cruft, of Boston, Mass., bequeathed \$110,000 to hospitals in that city.

The new Columbus Hospital on East Twenty-sixth street, New York City, will be begun in a few weeks. The building is to be ten stories high, will accommodate 300 patients and will cost \$150,000.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about \$180, will be made on July 14, 1914, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be on any subject in medicine, but cannot have been published. They must be typewritten, and if

written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the college on or before May 1, 1914. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of the competition that the successful essay or copy of it shall remain in possession of the college; other essays will be returned on application within three months after the award. Further information may be obtained on application to Thomas R. Neilson, M. D., Secretary, 19 South Twenty-second street, Philadelphia, U. S. A.

The Medical Men's Casualty Association has been incorporated with headquarters at Los Angeles.

The double red cross, with all its arms pointed, is the international tuberculosis emblem just endorsed by the National Association for the Study and Prevention of Tuberculosis.

Dr. Simon Baruch, of New York, expert on hydrotherapy, who returned from the International Medical Congress in London and a journey that took him to every spa of note in Europe at the instance of the Saratoga Springs Reservation Commission, said pleasure and health-gaining could not be successfully combined. If Saratoga wished to become famed as a health resort that city would have to dismiss from her field the races.

By means of an appliance devised by Prof. W. W. Abel, head of the department of pharmacology of Johns Hopkins University, it has been made possible to ascertain whether persons thought to be suffering from the effects of poisons really are under the influence of drugs and to discover almost immediately what poison they have taken. The contrivance consists of a series of coils and tubes which are submerged in saline solution. Its action is said to be the same as that of the kidney. By connecting the tubes with the jugular vein and the carotid artery, the blood is made to pass through the tubes. Through a porous substance the foreign and poisonous

matters in the blood filter into the saline solution. The solution may then be analyzed chemically.

Woman as an insurance risk was debated recently by delegates at the meeting of the medical section of the American Life Insurance Association, at St. Paul, Minn., August 26th. No definite conclusion was reached, although many of the speakers contended that woman's intuition informs her of approaching death, that she then seeks life insurance, therefore she is undesirable as a risk. Other causes of the seeming paradox—that, although women live longer than men, they are not proper risks, given by speakers were: Until recently, the women insured were those who sought insurance and not those solicited by agents. Medical examination of women is more difficult, and less rigid, than of men. Husbands usually have no insurance in their wives. Married women, insured by husbands who themselves have no insurance, therefore are the worst kind of risks. Spinsters are better risks than married women.

That antityphoid fever vaccination should not too soon be followed by antivariola vaccination is proved by the experience of William R. Shepherd, professor of history at Columbia University, and his wife, who recently arrived in Germany at the outset of a trip around the world. Mrs. Shepherd, who, together with her husband, was inoculated before her departure from New York, is seriously ill there from antismallpox vaccination, which proved extraordinarily virulent, perhaps on account of the reaction from previous antityphoid inoculation. Her condition is not believed to be dangerous. Professor Shepherd was also taken ill after his arrival in Germany, and is now at a sanatorium in Dresden.

Practical and applied hygiene is much farther advanced in the Philippines than in the United States, according to Dr. Allen J. McLaughlin, surgeon of the United States Public Health Service.

The International Tuberculosis Congress was opened in Berlin, delegates of twenty-two nations attending, October 23rd. Imperial Vice-Chancellor welcomed the delegates.

The feature of his address was an enthusiastic tribute to the "extraordinary energy and success with which the fight against consumption has been conducted in the United States."

Dr. Prof. Arrigo Visentini, the pathologic anatomist of the Roy University at Pavia, Italy, has been awarded the Warren triennial prize for 1913, in value \$500, by Harvard University, for his essay on "Function of the Pancreas and its Relation to the Pathogenesis of Diabetes."

The following is the corrected list, chosen at the recent Minneapolis meeting of officers of the American Society for Physicians' Study Travels: Presidents, Dr. James M. Anders, Philadelphia, Dr. William J. Mayo, Rochester, Minn., Dr. Lewellys F. Barker, Baltimore, Md., and Dr. Rudolph Matas, New Orleans, La.; secretary general, Dr. Albert Bernheim, 1225 Spruce street, Philadelphia; department directors: Finance, Dr. L. Webster Fox; travel recorder, vacant; publicity, Dr. Alfred Stengel; post-graduate work, vacant; travel manager, Dr. E. E. Montgomery.

"Climatic and Occupational Influence in Diseases of the Ear" was the subject of a paper by Dr. Clarence Blake, of Boston, Mass., in the otology section of the International Medical Congress at London. He remarked that miners were especially prone to ear diseases because of the dust and detonations in a circumscribed space without the possibility of diffusion. In the same way persons engaged in trades productive of dust and grime were inclined to be affected. "Noise is the most important and injurious by-product of industry," he said, "yet it is the last to receive attention." Arthur H. Cheatle, lecturer on aural surgery at Kings College Hospital, called attention to the deafness associated with aeroplaning and said much would be heard on this subject in the future. Three factors, he said, were conducive to this form of occupational deafness—height, speed and the noise of the motor.

Prof. J. H. Shrader, of the department of physics at Williams College, announced that he had found traces of radium in a spring near Williamstown, Mass., October 18th. Presence of the rare element seems to be

manifested in the form of gas, and thus far all his efforts to reduce it to salts of radium have proved unsuccessful.

James Ross, of Montreal, Canada, has just given \$200,000 to that city's hospitals.

Bedrooms in which the appointments are entirely black are becoming a rage with the "smart" women. This is consequent on the announcement of a leading medical authority that black induces sleep and is soothing to the nerves. In these rooms even the electric lights are tinted a dark gray, so that the effect is somewhat weird.

How absurd to vaunt our public schools as the best ever when three-fourths of the scholars in them need to have bodily ailments attended to! Much has been done to remedy these serious evils; yet obviously the work has only begun. And when the job concerns 20,000,000 children, anyone must see that it has to be gone about in a vast and epic way; men and women teachers, nurses, doctors, sanitarians, builders, and statesmen must together plan wisely and work earnestly in some great and enduring organization, so that every community in the land may benefit by their labors for adequate school administration, in suitable schools, and for medical supervision of the immature occupants. Such a logical co-working was the recent Fourth International Congress on School Hygiene in Buffalo, N. Y.—*Collier's Weekly*.

Dr. Louise Pearce, the only woman on the staff of Johns Hopkins Hospital, has been appointed an assistant to Dr. Simon Flexner, of the Rockefeller Institute, New York. She is the only woman who has ever been engaged in research work under Dr. Flexner. She was recently appointed to the staff at the Phipps clinic of Johns Hopkins Hospital, and was preparing to take up her duties there on October 1st.

Premier Asquith announced in the House of Commons, at London, recently, that a royal commission would be appointed to inquire into the causes and treatment of venereal diseases. This step has been taken by the Government as a result of a prolonged agitation by British medical organizations.

Twenty-eight countries were represented at the International Congress on School Hygiene, August 25th-30th. Great advances must result.

The Association of Surgeons of the Norfolk and Western Railway System met in annual session October 2d-3d, at Norfolk.

Dr. Henry Wishard, the oldest physician in Indianapolis, died in December at the age of 97 years. Dr. Wishard served throughout the Civil War as a volunteer surgeon. It was through his efforts that the first order for the removal of sick and wounded soldiers to northern homes was issued by President Lincoln.

In Massachusetts a statewide elimination of the drug store of questionable integrity which is selling liquor without a license and the Chinese laundry and corner bootblack stand and notion store where doses of cocaine and morphine and opium are being quietly slipped over the counter and in the back rooms, went into effect January 1 of the present year. One way or another, these types of stores and meeting places have been escaping regulation so successfully that Boston has become one of the noted cities for the wide distribution of harmful drugs.

Attorney General Carmody of New York in response to inquiries from physicians in various parts of the state has given an opinion that the cocaine law does not require a physician administering cocaine to a patient to furnish a certificate giving the name and address of the patient, the seller of the drug, his own name and address and the date and amount of the drug sold. Such a certificate, says the Attorney General, is required when the physician dispenses the drug to his patients in the sense in which drugs are dispensed by pharmacists. "The Doctor" he adds "however, must comply with the section of the law in such a case, providing that he must keep a record in a book for that purpose of all cocaine disposed of by him."

Supt. Miller together with the whole board of trustees of the Augusta (Maine) State Hospital has been requested to resign by the unanimous vote of the governor and council. Charges of mismanagement were preferred against Dr. Miller, Dr. Seth C. Gordon of Portland, president of the board of trustees and Mrs. Laura L. Cony of Augusta, the secretary of the board, by Fred

A. Chandler. Addison, Hall, Smith and Chandler were appointed trustees under the present administration.

Dr. C. E. Dunbar has left Manchester, N. H. and has settled in New Boston, N. H.

In pardoning Dr. William J. Morton for misuse of the mails in connection with mining frauds, President Wilson expressly stated that he did so for the purpose of restoring the aged physician's right to practice his profession. Words of this import were actually written into the pardon. And yet the medical law of New York seemingly excludes one in Dr. Morton's position from this privilege. Gov. Dix pardoned two such men, but it was held that his act in each case, while affecting a restoration to citizenship, did not carry with it the right to practice medicine on which the statute is exceedingly rigid.

Dr. John W. Staples, Franklin, N. H. died suddenly of shock in his office December 11th, 1913. He was found dead by his partner, Dr. James W. Woodman. Dr. Staples was a graduate of Dartmouth, in the class of 1876 and the University of Vermont Medical School in 1880. He was a former president of the New Hampshire Medical Society. He was born in Wells, Maine in 1855.

There are 30,000 idiots and feeble-minded persons in the state of New York who should be cared for in public institutions but accommodations for only 4,000 are provided. This is a statement made by the Board of Charities.

Dr. S. G. Goodrich, for the past two years a member of the medical staff of the Vermont State Hospital, has completed his duties there and entered into general practice in the office formerly occupied by the late Dr. W. F. Minard. Dr. Goodrich will specialize in nose and throat work in connection with his regular general practice.

The following motion filed before the Middlesex Superior Court in Massachusetts is the first of the kind ever made in the United States. The text of the motion is as follows:

Commonwealth of Massachusetts
Middlesex, ss. Superior Court, Divorce Division.
Florence M. Sanborn v. Robert C. Sanborn,
Motion for a Blood Test.

Florence M. Sanborn, petitioner for annulment of divorce decree, in above entitled case; moves this court to require Robert C. Sanborn, respondent, to allow a skillful and competent surgeon to secure from said Robert C. Sanborn a sufficient quantity of blood for the purpose of a microscopical test to show whether said Robert C. Sanborn is afflicted with an incurable venereal disease.

By FLORENCE M. SANBORN.

Mrs. Sanborn asks the test to show that Mr. Sanborn is afflicted with an incurable venereal disease. If a microscopical examination of his blood shows that, Mrs. Sanborn contends that he was not justified in obtaining a decree against her for desertion.

The town of Sanseverino in Italy invited the members of the profession to a celebration in honor of the quadricentenary of Bartolomeo Eustachio, the Italian anatomist of the sixteenth century. A marble tablet was unveiled and the occasion celebrated with a scientific regional medical congress, September 6th-25th.

The Provincial Royal Jubilee Hospital, Victoria, expects to construct a \$400,000 hospital building.

Dr. Sigura, of Buenos Ayres, on the final day of the International Medical Congress at London, gave interesting particulars of a peculiar affection which attacks the nose and throat and causes an inflammation exactly resembling cancer. He said it heals readily under potassium iodid. He added that the disease required careful diagnosis to distinguish it from cancer.

The important statement was made by a Belgian biologist, at the Brussels Congress on Cancer, in July, that he could now definitely confirm his discovery of a cancer-producing spirillum. When taken from the gut of a rat, fed to insects that were eaten by other rats, malignancy would ensue. Its relation to human cancer is now to be studied.

The latest diet craze is to have your food as highly colored as possible, and from Germany comes the pale blue lobster, the invention of a learned professor named Kornfeld. Red lobsters being too commonplace to whet the jaded appetites of society diners, the professor hit upon the

brilliant idea of adding an alkali to the water in which the lobsters are boiled. As a result, they come out a pretty pale blue, and the smart set are able to eat again.

Lobsters are not the only food that German aristocrats wish to be highly colored. Rose-colored soup and tinted bread also enter into the menus. Apparently there is a scientific reason for this latest fad in diet. An eminent medical man gave it as his opinion some time ago that a person's character can be gauged by the kind of colors he prefers in his foods. Thus, if you are very fond of yellow-colored foods, you are probably a person of somewhat low and vulgar tastes, but if you choose dishes of a brown or chocolate color you show yourself to be a person of refinement. A speaker at the Pure Food and Health Conference, recently held in London, pointed out the fact that very few people care for food that is quite colorless. "Invalids are ordered colored jellies and port wine," he said. "Children prefer colored sweets. Most of us would soon tire of all-white food."

Drs. Bordet and Gengou of Paris, who one year ago announced their discovery of the pertussis parasite, have had their valuable studies confirmed by Drs. Horner and Mallory.

Another triumph for doctors' initiative: "The lives of more than 185,772 children have been saved in seven years, 1906-1912, owing to improved social conditions here," is the remarkable statement of Dr. Newsholme, the medical officer of the Local Government Board, London, in his latest report. The saving of life cannot be attributed merely to favorable climatic conditions. It can be claimed, with high probability, to be the result of improved sanitary and housing conditions, of more efficient municipal and domestic cleanliness, of education in hygiene of increased sobriety of the population, and of the widespread awakening to the national importance of child mortality, with concentration on efforts of child-welfare work such as had never previously occurred.

Intermarriage made Caucasians of Japanese in two generations, says Dr. Sidney Gulick, an American educator, long resident in Nippon.

A gratifying announcement is that of the appointment of Prof. Carl Voegtlin as professor of pharmacology in the Hygienic Laboratory, United States Public Health Service, to succeed

Prof. Reid Hunt, now head of the department of pharmacology at Harvard University. It implies a continuation of Hunt's great work for the public.

In announcing, at Philadelphia, October 23d, the birth of the National Radium Institute, Dr. Charles L. Parsons said: "I am authorized by the Director of the Bureau of Mines to announce that a cooperative agreement has been entered into with the newly-organized National Radium Institute, whereby the Bureau obtains the opportunity of a scientific and technical study of the mining and concentrating of carnotite ores and of the most efficient methods of obtaining radium, vanadium, and uranium therefrom, with a view to increased efficiency of production and the prevention of waste. The National Radium Institute was recently incorporated with the following officers: Howard A. Kelly, of Baltimore, president; Curtis F. Burnam, of Baltimore, vice-president; Archibald Douglas, of New York, secretary-treasurer; James Douglas, of New York, and E. J. Maloney, of Wilmington, as additional directors. The Institute has no connection with the mining of pitchblende, details of which recently appeared in the Denver papers. It has, however, obtained the right to mine twenty-seven claims in the Paradox Valley region, among which are some of the best mines in this richest radium-bearing region of the world. Nearly 100 tons of high-grade carnotite have already been procured. Under the agreement with the Bureau of Mines, the technical operations of the mines and mill are to be guided by the scientific staff of the Bureau. Work will begin in an experimental plant to be erected in Colorado, using entirely new methods developed at the Denver office of the Bureau of Mines. Concentration experiments also will be conducted in the Paradox, probably at the Long Park claims, and if successful will be applied to reducing the wastes that now take place. Within a year at most, the mill operations should make results certain and the extraction of ore and production of radium will then be continued on a larger scale. The separation of uranium and vanadium will also be studied, a contract having already been signed for all these by-products that may be produced. All processes, details of apparatus and plant, and general information gained will be published for the benefit of the people."

Secretary Redfield predicted that vocational training schools would create an "industrial heaven" and end the nation's waste of human life.

Dr. Lewis D. Gilmore, Tufts 1913, has purchased the real estate and practice of Dr. Albion H. French of Pittsfield, N. H. Dr. French has gone to Gilmanton, N. H. to practice and to look after his extensive farms in that town.

Dr. Seth M. Jones of Franklin assumed Jan. 1, the duties of collector of internal revenue for the districts of New Hampshire, Maine and Vermont, succeeding Dr. E. O. Crossman of Lisbon.

Dr. J. G. Warner of Newport, N. H. occupies the office of Dr. Jones in Franklin, N. H. while Dr. Jones is in Portsmouth.

The people killed by motor cars in Greater New York in the year just closed number 302 as against 221 in 1912; of these, 141 were children. In New York State, outside of this city 150 were killed by motor cars as compared with 127 last year.

Dr. C. G. McDuffe; Baltimore Medical 1912, has opened an office in Manchester, N. H.

A VETERAN.

Perhaps the most remarkable character among the practitioners of medicine in the State of New Hampshire is the old gentleman who just celebrated his eighty-eighth birthday, Dr. William M. Parsons of Manchester. He is still vigorous, hale and hearty and as cheerful and warm-hearted as the old gentleman in the ancient tale.

The Doctor has practiced medicine and surgery in Hillsborough County, N. H. for sixty-five years; he practiced two years before he graduated at Woodstock, Vermont, from what is now the University of Vermont, Medical Department. His diploma is dated June 12, 1851. This just precedes the time of the union of the Woodstock and Castleton Schools of Medicine and their removal to Burlington.

The doctor's diploma bears the names of Dr. Benjamin R. Palmer, President, and Prof. of Anatomy; Dr. Antisell, Prof. of Chemistry; Dr. E. M. Moore of New York, Prof. of Surgery; Dr. Alonzo Clark, New York City, Prof. Inst. of Medicine; Dr. Childs of Pittsfield, Mass., Theory and Practice; Dr. E. Bartlett, Obstet-

rics and Materia Medica. His first course of lectures was taken at Hanover, N. H., but all the rest of his college training was at Woodstock. Dr. Parsons says it isn't true but does not object to the following anecdote being related about his early work: Some fifty or sixty years ago he was called to do an autopsy, in a small town just out of Manchester, to determine the cause of death. After a prolonged examination he and his assistants reappeared from the room where they had been at work over the body and to make a report to the family. The death of the woman had been sudden and unexpected by the relatives and friends and the doctor was at an utter loss to determine the cause of death after the long and careful examination of the subject; this was not going to be quite satisfactory to the family nor to Doctor Parsons, so he snipped off a very large appendix and showing it to the bereaved relatives he said: "There, I found that growing on the bowels and it was a wonder the woman lived as long as she did." The doctor is known to be very temperate and seldom or never uses alcohol in any form, but he does know its dangers and effects in the body and he advises those who persist in drinking to always put lots of water in their whiskey for, he says, this prevents cirrhosis of the abdominal organs. The grand old man says he doesn't care how long he lives so long as he is useful. He goes on long journeys now in consultation and spends weeks alone hunting and camping in the woods. He was born at Gilmanton Academy, N. D., December 30th, 1825.

AN INTERESTING EXHIBIT IN MEDICINE AND SURGERY AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.

One fact alone would make the exhibit in medicine and surgery at the Panama-Pacific International Exposition the most important of any similar display at any preceding exposition, for when the world comes to San Francisco in 1915 to celebrate the completion of the Panama canal, it will be divided in admiration of the two men who perhaps above all others are responsible, under the United States Government, for the successful termination of the gigantic work. And these two men are representatives of highest honor from the science of engineering and the science of medicine: Dr. William C. Gorgas,

Colonel in the United States Army Medical Corps, is the physician who undertook to preserve the lives of the canal builders in a land of malignant disease, while the toilers were operating under the guiding genius of the great Colonel George W. Goethals of the Corps of Engineers, United States Army.

Representatives of the science of medicine and surgery from every land under the sun will be present during the exposition, to pay tribute to the doctor and incidentally to study the processes whereby the ravages of a disease ridden zone were stayed and the camp of the canal builders became the abode of health.

The element that alone would lend a distinctive character to the exhibit, is the featured presentation of the methods whereby the deadly mosquito was fought in his native haunts of morass and jungle; the application of specially devised sanitary processes by which Dr. Gorgas and his men were victors in their struggle with deadly fevers, enervating malaria and others of the swarm of maladies that wait for men who penetrate those miasmatic lands "where even the birds forget how to sing." A complete demonstration of these methods, as well as the equipment that, under man's uses, achieved success, will be installed for the advantage of the world by the United States Government. It will excite the interest not alone of the medical fraternity, but of all such nations as are interested in the colonization of the tropics.

The Emergency Hospital, another interesting feature of the exhibit in the department of medicine and surgery, scheduled in the exposition catalogue as "Group No. 35," will be a model emergency hospital, provided with its equipment entirely by exhibitors.

The law of averages works at expositions as elsewhere and there will not be, even in 1915 in San Francisco, a suspension of the laws of gravitation, nor an annulment of the re-activities of cause and effect. Where a million people meet, there will be, in spite of all precautions to the contrary, cases of sickness, and the foolhardy will be subject to the usual percentage of disaster. Hence the necessity for an Emergency Hospital.

This Emergency Hospital will be a model equipped by the leading manufacturers of the country, with the best instruments and appliances and stocked with every drug that physicians know.

Dr. R. N. Woodward, at present in charge of the United States Marine Hospital, situated near the Golden Gate, has been appointed by the Treasury Department to assume control of the Emergency Hospital at the exposition and he has taken great pride in assembling all of the elements, materials and equipment necessary for a model institution. How well he has succeeded, and is still succeeding, with the choice of the whole world's supply at his disposal, will be seen by the interested when the exposition is opened.

Although the entire equipment is not yet provided and while changes in what has already been selected may be made if later proffered equipment is preferred, Dr. Woodward is sure that the Emergency Hospital at the exposition will be as near perfection as human endeavor, working in this most enlightened age, can make it.

Two superb examples of the skill of the manufacturers of auto-ambulances will be installed, an X-ray apparatus will be placed in the X-ray ward of the hospital; sterilizing apparatus; wound dressing appliances will be donated, and one manufacturer is providing even the spreads, with the seal of the exposition woven in the center, for the twenty beds that will be placed in the men's, women's, and isolated wards. Tables for minor and capital operations, the innumerable electric surgical appliances that human ingenuity has created, a library of medical books, a high power microscope with photographic apparatus and dark room for the development of negatives; and finally, a cradle for the possible future president or countess who may insist, perhaps prematurely, on visiting the exposition.

It is not contemplated by the exposition's directorate that patients will be kept at the hospital over night, for it is to conform strictly to its classification as a hospital for emergency cases. If, however, the patient's health were to be jeopardized by removal to his home or to another hospital, he will not be removed.

The installation of the emergency hospital with the variety of the equipment thereof—from beds and stoves and other non-medical material to drugs, ether and operating tables and other essentially surgical or medical material—might cause a confusion in exhibits were the scheme worked out with less careful consideration of all the exhibitors. Wherever the display normally would fall, whether in the department of Liberal Arts or Manufactures and Varied Industries,

there the exhibit will be actually considered. Surgical instruments in use in the Emergency Hospital will be regarded as in the Department of Medicine and Surgery in the Palace of Liberal Arts and will there be subjected to competitive examination with the other exhibits, although manufacturers, judging by the applications for privileges of hospital employment of products, are not unaware of the greater advantage accruing to their exhibit when shown under working conditions. In any event, the jury of awards will be careful to consider that advantage and will not let it prejudice the displays under glass cases in the Palace of Liberal Arts.

In the meanwhile the student of municipal affairs, the expert in town policing, as well as the doctor, the surgeon and the nurse, will be vastly interested and enlightened by the model emergency hospital at the exposition, where any case will be cared for, from that provided by a female exercising her inalienable right to faint, or that of a child after his first lesson in the immutability of gravity's law, to that of an impulsive infant whose ambition to occupy the pretty cradle will reflect more credit on his taste than his decorum.

OBITUARY.

DR. FRANK H. O'CONNOR OF BRATTLEBORO DIED
SUDDENLY OF HEART DISEASE AT HIS HOME,
DECEMBER 26TH.

The death of Dr. O'Connor removes a capable physician, a surgeon whose skill had earned for him a high place in the regard of his professional associates, a resident whose interest in Brattleboro led him to give much of his time in aiding the promotion of its best interests, a man whose personality made warm friends of all his acquaintances, a husband who manifested a strong affection for his wife. His death comes in the very prime of his manhood and his usefulness to humanity while actively engaged in the practice of his profession.

Dr. Frank H. O'Connor was born in Keeseville, N. Y., Sept. 15, 1869, son of David and Katherine (Taylor) O'Connor. His father died not long after the birth of this son, and he continued to live with his mother until her death in 1891 and then went to live with an uncle, P. R. Taylor, in Richmond borough, Staten Island.

Dr. O'Connor attained prominence as a baseball pitcher during his school and college days.

At the University of Vermont and at Dartmouth, especially at the latter college, he attained high rank among college pitchers.

He spent two years of his student life at the school of philosophy in Montreal and graduated in 1898 from the Long Island College Hospital in Brooklyn, N. Y. After serving a period in St. Mary's Hospital in New York he moved to Bellows Falls in that same year and began an independent general practice.

In April, 1904, he moved to Brattleboro and opened an office in the Bank building. He later bought the land now occupied by the Masonic temple and erected upon it a handsome residence which now constitutes the front part of the Masonic temple. Five years later he sold the property to the Masonic fraternity and purchased with Charles F. Mann the property on Main street next to the Unitarian Church, where he erected a cozy office building.

While he had a wide practice in medicine Dr. O'Connor by his skill had earned a high place among the surgeons of this section. He was a surgeon connected with the Brattleboro Memorial Hospital and was frequently called from town to perform operations of a delicate nature. He made special trips to New York and Philadelphia for clinics for study in surgery.

He was surgeon of the Boston & Maine railroad and medical examiner for the Mutual Life and Equitable Life Insurance Companies, for the L. C. B. A. and Leo Council, K. C. He was a member of the Congress of Clinical Surgeons of America, of the Windham County Medical Society, the Connecticut Valley Medical Association and the Vermont State Medical Association.

BOOK REVIEWS.

CASE HISTORIES IN PEDIATRICS.—By John Lovett Morse. Octavo 320 pages. Illustrated. Price, \$3.00. W. M. Leonard, Publisher, Boston, Mass.

This book is entirely a new idea in medical literature for it gives the physician an opportunity to take a post-graduate course in diseases of children at home. The book is splendidly indexed, well illustrated and the case histories cover the entire subject of diseases of children from the standpoint of the clinician. A book that must be of great service to the general practitioner.

DIET IN HEALTH AND DISEASE.—The new (4th) edition By Julius Friedenwald, M. D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Fourth Edition, thoroughly revised and enlarged. Octavo of 857 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$4.00; Half Morocco, \$5.50 net.

This book, now in its fourth edition, is a scientific study of foods of different kinds and their applicability to the various diseases and conditions. It takes up special methods of feeding, infant feeding, diet suitable for various diseases, and surgical conditions, army and navy rations, dietaries in public institutions, together with numerous recipes for food suitable for different diseases.

It is a most useful book for those wishing information on this subject.

A CLINICAL MANUAL OF MENTAL DISEASES.—By Francis X. Dercum, M. D., Ph. D. Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Octavo of 425 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.00, net.

This book is written from the view point of the clinician, with special reference to prognosis and treatment. It deals with mental disease in much the same general way as any other disease. What can be done for it? Where can it be best cared for? And, what is the prognosis? These are the questions that the general practitioner has to answer, for he sees these cases first. This book was written with the view to helping him answer these questions and has succeeded admirably well.

ANATOMY, DESCRIPTIVE AND APPLIED.—By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; lecturer on Anatomy at St. George's Hospital Medical School, London. New (English) edition, thoroughly revised and re-edited, with the Basle Anatomical Nomenclature in English, by Robert Howden, M. A., M. B., C. M., Professor of Anatomy in the University of Durham, England. Imperial octavo, 1407 pages, with 1126 large and elaborate engravings. Cloth, \$6.00, net; leather, \$7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Gray's anatomy is too generally known and too favorably known to need special comment. This English edition has adopted the English B. N. A. nomenclature which is of decided advantage. It gives a glossary showing in parallel columns the different terminations. The work is beautifully illustrated and the book is an example of the best in book making.

A TREATISE ON THE DISEASES OF WOMEN. For Students and Practitioners.—By Palmer Findley, B. S., M. D., Professor of Gynecology, College of Medicine, State University of Nebraska; Gynecologist to the Clarkson Memorial Hospital and Douglas County Hospital; Fellow of the American Gynecological Society; Fellow of the American Association of Obstetricians and Gynecologists; Fellow of the Chicago Gynecological Society. Octavo, 954 pages, illustrated with 632 engravings in the text and 38 plates in colors and monochrome. Cloth, \$6.00, net. Lea & Febiger, Philadelphia and New York, 1913.

This text book on Diseases of Women is a systematic discussion of the pathology, diagnosis, and treatment of the diseases peculiar to women. Special importance is placed on diagnosis, and the medical treatment of these diseases is considered more fully than in many books on this subject. It does not, however, minimize the conditions requiring surgical treatment, and gives directions for the preparation of the patient for operation and directions for care after operation. It is well written, profusely illustrated, and a valuable contribution to the literature on this subject.

We have received a copy of Volume I of the Medical and Surgical Report of the Episcopal Hospital of Philadelphia. In addition to the material in ordinary hospital reports it gives a careful analysis of the cases of tetanus and the rational treatment of this disease. A discussion of high blood pressure, neuritis, and neuralgias. Many cases of fracture are reported and the X-ray pictures shown. It is a valuable work as it gives an analysis of the work actually done, with the results obtained. It is an ideal hospital report.

OBSTETRICS.—A Manual for Students and Practitioners. By W. P. Manton, M. D., Professor of Obstetrics and Clinical Gynecology, Detroit College of Medicine, Detroit, Mich. Second edition, revised and enlarged; including selected list of State Board Examination Questions. 12 mo, 292 pages, with 97 engravings. Cloth, \$1.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This little book is a manual of obstetrics, not a compendium. It was intended as a means for the physician to refresh his memory quickly and the student to easily review his work. While it is in no sense a text book it does serve the purpose of a manual exceedingly well.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY.—For Students and Practitioners. By E. C. Dudley, A. M., M. D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Sixth edition, thoroughly revised. Octavo, 795 pages, with 439 illustrations, of which many are in colors, and 24 full-page plates. Cloth, \$5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

The appearance of this new (the sixth) edition of this work is conclusive evidence that the author intends to keep it the leading work on the subject. The general arrangement of the work, the careful consideration of each subject, but without unnecessary length, the beauty of the illustrations which are profuse and original, make this a work without a superior. It should be in the library of every physician.

PATHOLOGY, GENERAL AND SPECIAL.—A manual for Students and Practitioners. By John Stenhouse, M. A., B. Sc., (Edin.) M. B. (Tor.), formerly demonstrator of Pathology, University of Toronto, Toronto, Canada. Second edition, revised and enlarged; including selected list of State Board Examination Questions. 12 mo, 278 pages, illustrated. Cloth, \$1.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This work furnishes a way for the physician and student to quickly review the essentials of pathology. The author hopes that this work will render further research more profitable. The work fully justifies this hope.

PYORRHEA ALVEOLARIS.—By Friedrich Hecker, B. Sc., D. D. S., A. M., M. D., member of the Academy of Science of St. Louis, Mo.; Consultant at Bell Memorial Hospital of the School of Medicine, University of Kansas, Rosedale, Kansas; Consultant at St. Margaret's Hospital, Kansas City, Kansas. Illustrated. Price \$2.00. C. V. Mosby Company, St. Louis, 1913.

This little book is a complete discussion of the varieties of pyorrhea. It gives the technique of making blood smears and staining them, the bacteriology, pathology and treatment of the disease, together with the author's views of the nature of the disease and his treatment by vaccines.

DIAGNOSIS OF THE MALIGNANT TUMORS OF THE ABDOMINAL VISCERA.—By Professor Rudolph Schmidt, Professor of Medicine in the University of Innsbruck. Authorized English Version by Joseph Burke, Sc. D., M. D., Attending Surgeon, Buffalo Hospital of the Sisters of Charity; Consulting Surgeon, Emergency Hospital, Buffalo, N. Y. Rebman Company, Herald Square Building, 141-145 West 36th St., New York, 1913. Price \$4.00.

This is a discussion of malignant disease of the abdominal viscera. Great emphasis is laid upon diagnosis, for early intervention is the only hope. While the general style of the book is such as to make the reading of it rather tiresome the subject matter is the result of such careful and extensive observation that it is well worth while. It is a valuable contribution to the literature on diagnosis of malignant disease of the abdominal viscera.

INTERNATIONAL CLINICS.—Volume IV. 23rd Series.

This number of the clinics contains many interesting articles among which are newer methods of treating neuritis, blood pressure, gunshot wounds, treatment of hemorrhoids, etc. The articles are all on interesting subjects of medicine and surgery and are well worth the reading.

DISEASES OF CHILDREN.—By Henry Enos Tulet, M. D., Late Professor of Obstetrics, University of Louisville, Medical Department; Visiting Physician Masonic Widows' and Orphans' Home, Louisville, Ky.; Secretary of the Miss. Valley Medical Association; Ex-Secretary and Ex-Chairman of the Section on Diseases of Children, American Medical Association; Ex-President American Association Medical Milk Commission, etc. With 106 engravings and 3 colored plates. Second revised edition. C. V. Mosby Company, St. Louis, 1913.

This text book for students and practitioners is a carefully written discussion of diseases of children, it is clear, concise and to the point.

The subject of artificial feeding of infants is discussed fully, the influence of milk on infant mortality, the proper conditions for the production of clean milk, sterilization, modification formula for feeding, etc., are carefully considered. The management, care and treatment of children are fully discussed. It is well illustrated. The discussion of milk and infant feeding alone are enough to recommend the work.

PAPINE IN PAIN.—The wide popularity of Papine (Battle) has logically followed as a consequence of its value as a prompt anodyne, and one that is free from most of the evil features attaching to morphine. When opiates become clearly necessary for the relief of pain in nervous women or in children, physicians will find Papine (Battle) to be as effective as opium, and with the distinct advantage of being free from most of opium's disagreeable effects.

HEART'S CONTENT.

AUTHOR UNKNOWN.

"A sail! a sail! Oh, whence away,
And whither, o'er the foam?
Good brother mariners, we pray,
God speed you safely home!
Now wish us not so foul a wind,
Until the fair be spent;
For hearth and home we leave behind:
We sail for Heart's Content."

"For Heart's Content! And sail ye so,
With canvas flowing free?
But, pray you, tell us, if ye know,
Where may that harbor be?
For we that greet you, worn of time,
Wave-racked, and tempest-rent,
By sun and star, in every clime,
Have searched for Heart's Content."

"In every clime the world around,
The waste of waters o'er;
An El Dorado have we found,
That ne'er was found before.
The isles of spice, the lands of dawn,
Where East and West are blent—
All these our eyes have looked upon—
But where is Heart's Content?"

"Oh, turn again, while yet ye may,
And ere the hearths are cold,
And all the embers ashen-gray,
By which ye sat of old,
And dumb in death the loving lips
That mourned as forth ye went
To join the fleet of missing ships,
In quest of Heart's Content.

"And seek again the harbor-lights,
Which faithful fingers trim,
Ere yet alike the days and nights
Unto your eyes are dim!
For woe, alas! to those that roam
Till time and tide are spent,
And win no more the port of home—
The only Heart's Content!"

We have doubled the strength of Taka-Diastase.

THE foregoing is a simple statement of fact. Seven words are sufficient to express it. But back of these words are *years of toil and study*. Back of these words are *hundreds of experiments*—fruitless for the most part, but yielding in the end the long-sought secret.

We gave Taka-Diastase to the world in 1895, and throughout the nineteen years that have since elapsed the product has been recognized by the medical profession as the most efficient agent in the treatment of amylaceous dyspepsia.

Potent as it was at its inception, we have constantly sought to improve Taka-Diastase. Once before we enhanced its value fifty per cent. Now, by *other* improvements in the process of manufacture, we are again enabled to increase its liquefying power, *this time multiplying its efficiency by two*.

Our improved Taka-Diastase will liquefy 300 times its weight of starch in ten minutes under proper conditions.

In all of our Taka-Diastase preparations—liquid, powder, capsule, tablet—as well as in the several combinations with other agents (both capsule and tablet)—the high-potency product is now being used.

We have not advanced the price.

FOR A FULL LIST OF OUR TAKA-DIASTASE PRODUCTS,
SEE OUR CATALOGUE, PAGES 174-175.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.



"Every desired form."

THERAPEUTIC NOTES.

CLINICAL RESULTS WITH THE PHYLACOGENS.—Under the above caption, Dr. R. W. Locher, Grafton, Vt., in the *Memphis Medical Monthly*, has this to say: "In judging the therapeutic value of a new preparation, it is advisable that a great number of case reports be considered; and in order that the medical profession may have a great number of cases from which to judge, it is the duty of every physician to report such results as he may have. The Phylacogens are of comparatively recent origin, and yet even at this early date they have displayed their ability to produce satisfactory and in some cases remarkable results in the treatment of a great variety of pathological conditions. * * *

"We are informed that the Phylacogens are not claimed to be a 'cure-all' in any sense of the word, but simply valuable therapeutic agents in the treatment of numerous infectious conditions. From the very fact that all but Mixed Infection Phylacogen are to be directed against specific infections, it is necessary, before employing them, to make an accurate etiological diagnosis. For obvious reasons one cannot expect to produce results if Rheumatism Phylacogen is administered in a case that is really one of gonorrhoeal arthritis. Neither will an osteomyelitis or a syphilitic periostitis yield to Rheumatism Phylacogen, but the former may be logically treated with Mixed Infection Phylacogen. It would seem that this latter Phylacogen will ultimately prove of great value to the surgeon in combating post-operative infections, as well as infections following injuries of all kinds."

The writer then details fourteen case reports, covering a variety of diseases, and adds this by way of comment:

"From the foregoing cases it would be possible to draw numerous conclusions. What is especially striking, however, is that the Phylacogen treatment is apparently successful in the vast majority of cases and seems to give prompter and more definite results than is possible to secure with the usual recognized treatments. As a physician's experience increases he finds a greater number of cases in which each of the Phylacogens may be used, with the expectation of great benefit resulting therefrom. In any event, it must be conceded that Phylacogen in its various forms presents great possibilities and must be classed as a therapeutic agent which is more than worthy of trial."

AUGMENTATION OF SYSTEMIC RESISTANCE TO INFECTIONS.—Clinical experience seems to show quite clearly that certain infections may be reduced in severity by the administration of Ethol (Battle). Thus in erysipelas and furunculosis, to select two infections which have responded to the internal use of Ethol, it has been found that Ethol exerted an influence on the process of a most beneficial nature, which probably is best explained by assigning to Ethol the positive power of increasing the phagocytic action of the blood stream. Typhoid fever and small-pox are also diseases which indicate the employment of Ethol.

THE RECOVERY FROM TYPHOID.—In spite of the improvements in general sanitation, typhoid fever still

continues to exist, and is especially prevalent during the fall and early winter months. It is more than probable that most cases occurring in the larger cities are the results of infections contracted at the summer vacation resorts, where the water and food supplies are not as carefully safeguarded as in urban communities. Although many forms of treatment, designed to abort or cut short the disease, have been advocated from time to time, it is indeed doubtful whether such regulation of the infection has ever been accomplished. As the average course of Typhoid is from four to six weeks, it is scarcely to be wondered at that the patient usually emerges from the attack in a generally devitalized condition. This is accounted for not only by the general toxemia incident to the bacillary infection, but also because the practically exclusive milk diet generally adopted deprives the patient of the natural food which ordinarily maintains the ferric sufficiency of the blood. Some degree of anemia is therefore almost always in evidence when convalescence is first established. The quickest and safest way to overcome this blood deficiency and to hasten revitalization and a return to the normal, is to give Pepto-Mangan (Gude) regularly and in full dosage. This thoroughly agreeable and acceptable hematic tonic is particularly serviceable in typhoid convalescence, because it does not irritate or disturb the digestion, nor induce constipation.

AN ALTERNATIVE OF LONG SERVICE.—It is mainly in chronic skin and glandular diseases that alteratives have found their most distinct field of usefulness, for these are conditions aggravated and continued by impaired nutrition and elimination, in the correction of which alteratives show what potent remedial forces they are. Among the alteratives Iodia (Battle) has long enjoyed professional favor and in this will be found a striking demonstration of its value, for no class of drugs are put to a more rigid test than alteratives, so its long continued use by physicians is the best evidence that it meets the demands made upon it. Iodia (Battle) will show its power in chronic skin diseases, glandular involvements and in other states indicating the corrective influence of an alterative agent. A distinct advantage offered by Iodia is that it may be continued over long periods without causing distress.

A SAFE SEDATIVE AND ANODYNE.—This is the language in which those who know its properties, describe Pasadyne (Daniel). It is to be understood that Pasadyne (Daniel) is a distinctive name given to a concentrated tincture of *passiflora incarnata* which had been employed for a generation.

The specific value of Pasadyne lies in its marked sedative and analgesic powers and freedom from evil effects. This feature at once shows its superiority over opium and the coal-tar products. In probably the majority of instances by which opium or a coal-tar derivative is indicated Pasadyne (Daniel) would act satisfactorily as a substitute. The physician may rely upon it. Sample bottle may be had by addressing the laboratory of John B. Daniel, 34 Wall Street, Atlanta, Georgia.

ADDENDA

The following names should be added to the list of members of the State Society published in the December issue of the journal.


- T. A. Gleason.....No. Bennington
- J. R. Wilson.....Bennington
- Everett E. PotterNo. Pownal
- E. N. GardinierBennington
- A. S. M. ChisholmBennington
- W. E. PutnamNo. Bennington
- T. J. AllenBurlington
- J. M. CaisseWinooski
- S. H. CoffeeWinooski
- A. C. KinneyRichmond
- C. E. WellsBurlington
- G. C. BerkeleySt. Albans
- F. E. QuigleyRutland
- Ora H. ProutyBellows Falls
- C. W. RayChester
- John StevensonChester
- H. W. TaylorBrattleboro

USE OF HEROIN SPREADING RAPIDLY AMONG DRUG FIENDS.

Laws against the Promiscuous Sale of Morphine and Cocaine Leading Those with Drug Habits to Take Up even More Dangerous Substances.

According to information gathered by the U. S. Department of Agriculture, there has been a sudden and very significant increase in the use by persons with a drug habit of the little-known but very dangerous drug called "heroin." The sales of this drug have recently increased greatly, particularly in those States which have rigid laws preventing the indiscriminate sale of morphine and cocaine. Investigation of the subject establishes the fact that many drug victims who formerly used morphine and cocaine and who under the new laws find it difficult to obtain these substances have begun using heroin, the sale of which is not as yet as carefully restricted under State laws. The drug is said to be fully as dangerous as morphine and by many is held to be much worse, for the reason that it occasionally kills the victim outright and its habit is far harder to overcome than the use of the other drugs. The Department, pending further action, especially warns all people who are unfamiliar with the drug to avoid all preparations containing the substance and to take it only on the prescription of reputable physicians.

Heroin, the consumption of which by drug takers has recently increased so markedly, is a derivative of morphine, the opium alkaloid. It is known in chemical parlance as diacetyl morphine, and is frequently found as a constituent of a number of proprietary drugs. Its use seems to be especially notable in parts of Pennsylvania. This year the coroner's office in Philadelphia County has held inquests on five sudden deaths from heroin poisoning. In each case the victim was a heroin fiend and was on a heroin debauch and took an overdose. The substance apparently is far more dangerous for drug users than morphine or cocaine. Drug fiends apparently are able to consume relatively large quantities of the other two drugs, but any sudden and material increase in the amount of heroin taken is very liable to prove fatal. As indicating the wide sale of this substance, it is known that one druggist in Pennsylvania whose store was located in an



K. & O. DOUCHE FOR THE APPLICATION OF
GLYCO-THYMOLINE TO THE NASAL CAVITIES

GLYCO- THYMOLINE

FOR

CATARRHAL CONDITIONS

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Intestinal
Stomach, Rectal
and Utero-Vaginal

KRESS & OWEN COMPANY
561-363 PEARL ST. NEW YORK

undesirable section of his city has been buying heroin tablets in 25,000 lots.

The labels of proprietary and other medicines purchased by laymen should be carefully scrutinized for a statement which is required by the National Food and Drugs Act of the quantity or proportion of heroin or any derivative or preparation thereof.

The word "heroin" on any label should be regarded as a danger signal, according to the experts of the Department.

A TALE OF TAKA-DIASTASE.—To multiply by two the medicinal efficacy of a powerful diastasic ferment is a notable accomplishment. And that is what scientific investigation has done for Taka-Diastase. The result, as may be presumed, was not achieved at a single fortunate stroke. It was the culmination of years of study and experimentation. The story is briefly told on another page of this issue of VERMONT MEDICAL MONTHLY, over the signature of Parke, Davis & Co. It bears this caption: "We Have Doubled the Strength of Taka-Diastase." The reader is advised to turn to this announcement, which should prove of interest and value to every practitioner who faces the problem of amylaceous dyspepsia.

A word here with reference to the therapeutic application of Taka-Diastase may not be amiss. The product may be prescribed with advantage in the treatment of any pathological condition in which the salivary digestion is inhibited or impaired—in any case of gastric or intestinal disorder in which the starches are digested with apparent difficulty. It is employed with good results in the dietetic treatment of subacute and chronic gastritis; in infantile diarrhea, especially in cases in which the diarrhea alternates with constipation; in malnutrition or inanition; in the vomiting of pregnancy; in diabetes due to pancreatic disease.

A RECONSTRUCTIVE AFTER WINTER DISEASES.—The unanimity of opinion among medical men in choosing cod liver oil as the reconstructive *par excellence* after diseases of the respiratory tract proves beyond doubt its value.

The only question which can arise in connection with cod liver oil's employment is the form in which to give it, and this question has been settled in the minds of those physicians who prescribe Cord. Ext. Ol. Morrhuæ Comp. (Hagee). With this product the patient enjoys every advantage of the raw oil, and is spared its nauseating effects.

REPUTABLE MANUFACTURING PHARMACISTS DO NOT FURNISH EMMENAGOGUES FOR IMMORAL PURPOSES.—Recently one of the leading manufacturing pharmaceutical houses received a letter upon the letterhead of a retail druggist, but signed by another name followed by the word "druggist." The person signing the letter may have been a clerk or successor of the druggist. The letter was as follows:

"There is practically no sale for your Emmenagogue Improved Pills, as few ladies know anything about them, and we can give no advice, as we know nothing about them ourselves as to the dose, etc. Please let us know by return mail and tell us how to use, doses, etc."

Reply was made to the pharmacist whose name was on the letterhead, and was as follows:

"We have our doubts about Mr. _____ being a druggist, for we cannot imagine any druggist not knowing that it is not only immoral, but criminal, to sell an emmenagogue except upon a physician's prescription. We believe that every druggist who sells an emmenagogue direct to the consumer is put upon his notice that it will be used for an immoral and criminal purpose. Emmenagogues on our list are intended exclusively for the prescription trade and we never knowingly sell them for popular use or to be recommended and resold as remedies for female complaints, etc."

To talk about doing without nerve sedatives in cases of hysteria, neurasthenia, insomnia, epilepsy, and disorders of that type, is like talking about doing without fire to warm ourselves. The time may come when we shall be able to make direct use of the sun's rays and do away with stoves and furnaces and even electric heaters; but not, we think, during the lifetime of the present, or even the next generation. So that time may come in the distant future, when we shall not have to sedate these neurotic patients, but it is not yet, and it is not much practical comfort to them to preach to them about the future millenium. What they need just now is a safe and effective sedative; one which will give them the desired rest, and facilitate their recovery, and at the same time, carry with it no danger of habit-slavery. Such a remedy will be found in Neurosine. There is nothing mysterious or quackish about Neurosine; it is composed of tried and standard drugs, put up in elegant and palatable form. The Dios Chemical Company, of St. Louis, Mo., will send you samples by mail on request.

It will be a matter of great satisfaction to all those who have enjoyed pleasant relations with the Purdue Frederick Co. for so many years, to learn that this highly respected firm is making such gratifying headway with their new dental cream Redox. Their current campaign in the leading metropolitan dailies has attracted widespread attention and been commented upon most favorably. The copy has been of an unusually high order and just what might have been expected from so conservative a firm. Dignified, clear cut and free from exaggerated claims, this copy has simply presented the arguments for Redox in a definite, concise manner and then left everything to the judgment of the reader and the known merit of the product itself. The whole campaign is a splendid example of clean, conservative methods. That the old spectacular methods with extravagant, blatant claims are no longer needed has thus been amply demonstrated, for we are reliably informed that the sales of Redox have been increasing rapidly.

Another well known medical advertiser has recently been making a conspicuous success in the lay field through conservative advertising. This is Van Horn and Sawtell who have been presenting for some time their toilet product Velogen to the gentle women of New York and vicinity through the aid of the leading New York City papers. Starting out with a preparation possessing certain unique qualifications which fitted it particularly for the care and preservation of

the skin and complexion, the advertising copy has been characterized from the first by plain, common place statements, devoid of all bombast or extravagant claims. The copy throughout has not only reflected the conservative methods that have given Van Horn & Sawtell their enviable standing in medical and surgical circles, but has presented a striking illustration of the result-bringing qualities of sound, homely, common sense statements in advertising to intelligent, fastidious people. It is always gratifying to witness a substantial success, especially when as in the case of Velogen, it has been achieved by methods that exemplify so beautifully a well planned, skillfully conducted.

THROAT AFFECTIONS.—In all acute or chronic inflammations of the throat, pharyngitis, tonsilitis and laryngitis especially, Gray's Glycerine Tonic Comp. will be found of exceptional value. Used in appropriate dosage it allays congestion of the mucous membrane and underlying tissues, thus relieving pain and soreness, and by imparting tone to the local structures helps to restore normal conditions. "Gray's," moreover, is particularly useful as a prophylactic measure in those patients who are peculiarly subject to frequent colds. In such cases, its use from time to time tends to increase the resistance of the local mucous membrane and enable it to successfully combat the germ attack. Public speakers and singers are also greatly benefitted by "Gray's" and if administered for several days before putting the throat or voice to unusual strain, it can be relied upon to increase the strength and vitality of the local structures.

THE BLADDER ILLS OF THE AGED.—Certain bothersome bladder troubles of elderly people are often due quite as much to systemic debility as to local weakness. Lack of space prevents any extensive consideration of the subject, but if the whole body is debilitated the metabolism is sure to be deranged, the bowels become sluggish and an increased amount of abnormal or waste products find their way into the urine. These are more or less irritating and account not infrequently for the low grade form of cystitis that accompanies the "run down" state of the aged. In such cases, tonic medication is urgently indicated and the well known capacity of Gray's Glycerine Tonic Comp. for promoting functional activity and increasing bodily elimination gives it a special utility in the management of any bladder trouble in which metabolic depression or derangement is a factor.

Under its influence, the functional activity of the whole organism is promptly increased with the result that physiologic processes throughout the whole body are stimulated, the metabolism is regulated, and elimination increased.

The benefits from "Gray's," therefore, are both prompt and pronounced and through its use many cases of chronic cystitis that are due to or aggravated by general debility or malnutrition, are cleared up in short order.

In this connection it is no exaggeration to state, moreover, that few remedies are more serviceable in all conditions calling for tonic or upbuilding measures than Gray's Glycerine Tonic Comp.

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(Smith)

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MENORRHAGIA
METRORRHAGIA
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THE GOVERNMENT AND RADIUM.

The supineness of the United States government as compared with the attitude of some foreign governments in matters relating to the health and welfare of its citizens is perhaps nowhere better illustrated than in its relation to radium. Some time ago *The Journal of the American Medical Association* called attention to the fact that radium deposits of unusual value had been found in Colorado, but that they had already passed to a large extent into the hands of private owners who were exporting the most valuable ore to Europe. So far the United States government has taken no steps to secure to its citizens the use of this element which, notwithstanding the exaggerated and unwarranted claims made for it by certain commercial interests, promises to have a unique field of usefulness in the treatment of disease. The difference in the attitude of European governments on the subject is shown by the fact that the Austrian government immediately on the discovery of radium in St. Joachimsthal secured control of the mines producing radium and arranged for its utilization for scientific and medicinal purposes.

Although possessing no radium-producing mines, Germany recently has purchased a supply of radium and placed it at the disposal of some of its university hospitals. The popularity of this action has been shown by the comments of the German press; in fact, a portion of the latter is advocating that the German government take over the entire control of the radium used for medicinal purposes in Germany. Thus the *Kölnische Volkszeitung* states that "to allow the traffic in this unique medicinal agent to be controlled by private firms is to upset all ideas of culture and humanity; a condition of affairs in which private gain and speculative interests are allowed to come into conflict with the health of the people is not to be tolerated." Yet the United States is allowing the radium found on its public domains to be monopolized by private persons without so far having made any provisions for securing to its citizens any benefit from it.

Aside from the foregoing considerations, however, a special responsibility rests on the United States to investigate, not only the occurrence, but also the usefulness of radium and radio-active waters, for the government itself has taken the lead in exploiting, in an entirely unjustified man-

ner, the radio-activity of the waters of Hot Springs, Arkansas. These springs are the property of the federal government, and the latter for some time has been advertising that the waters owe their value to their radio-activity—a claim that has never been verified; in fact, the degree of the radio-activity of these waters has never, to our knowledge, been made public, although it seems that the Interior Department, which has jurisdiction over the springs, is in possession of information on this subject. The late Major Hallock, medical director of the springs, recently called attention to the efforts which had been made to secure an investigation of the value of the waters; the bill before Congress providing for such an investigation was never reported from the committee, and it is said that the failure of the committee to act on it was due to the opposition of the representatives in Congress of certain purely local interests at Hot Springs.

Thus our national government is not only allowing the deposits of what is already known to be of value to fall into the hands of private commercial interests, but also is actually a party to the exploitation of "radio-active" waters in a manner for which there is at present no justification.

 THE PRAYER OF THE PHYSICIAN.

"O God, I pray that I may have absolute intellectual honesty. Let others fumble, shuffle and evade, but let me, the physician, cleave to the clean truth, assume no knowledge I have not and claim no skill I do not possess.

"Cleanse me from all credulities, all fatuous enthusiasm, all stubbornness, vanity, egotism, prejudices and whatever else may clog the sound processes of my mind. These be dirt; make my personality as aseptic as my instruments.

"Give me heart, but let my feelings be such as shall come over me as an investment of power, to make my thoughts clear and cold as stars and my hand skillful and strong as steel.

"Deliver me from professionalism, so that I may be always human, and thus minister to sickly minds as well as to ailing bodies.

"Give me constant realization of my responsibility. People believe in me. Into my hands, they lay their lives. Let me, of all men, be sober and walk in the fear of eternal justice. Let no culpable ignorance of mine, no regret nor love of ease, spoil the worth of my high calling.

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"Make my discretion strong as religion, that the necessary secrets of souls confided in me may be as if told to the priest.

"Give me the joy of healing. I know how far short I am of being a good man; but make me a good doctor.

"Let me so discharge the duties of my office that I shall not be ashamed to look any man or woman in the face, and that when at death I lay down my task I shall go to what judgment awaits me, strong in the consciousness that I have done something toward the sanity, health and happiness of all people, something toward alleviating the incurable tragedy of life. Amen."

—*Frank Crane.*

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When given in large doses, gr. X to XV, four times daily it is found in the saliva, secretions of the middle ear and nose, cerebrospinal fluid, bile; in short, in practically all secretions and excretions of the body, and hence its use as an antiseptic is indicated in *Rhinitis, Otitis Media, Sinusitis, Bronchitis, Influenza* and many other conditions which will at once occur to the clinician.

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VERMONT MEDICAL MONTHLY

the clinic, and the duties of the "Medical Adviser." From what has been said it will be clear that not only will the medical advice given in no way interfere with the legitimate work of private physicians and dispensaries, but that it will materially aid them in successfully treating their patients.

LEARNING GOLF.

A young woman entered a sporting-goods store one morning, and the polite clerk went forward to meet her.

"I want," she said, "to see some golf clubs."

"Certainly," replied the clerk. "About how many do you want?"

"Well, really," she responded slowly, "I scarcely know. You see, I am just learning to play golf, and I do not know much about it as yet. Why, I don't even know which end of the caddie to use."

—June Lippincott's.

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In our Fur Coat Department we are showing a grand assortment of Fur and Fur Lined Garments for men and women, ranging in price from \$25.00 to \$100.00 each.

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Vermont Medical Monthly

Official Organ of the Vermont State Medical Society.

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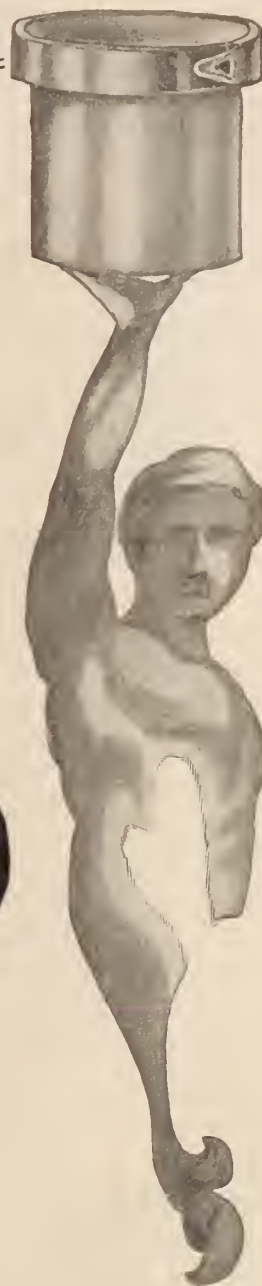
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USE OF HEROIN SPREADING RAPIDLY AMONG DRUG FIENDS.

According to information gathered by the United States Department of Agriculture, there has been a sudden and very significant increase in the use by persons with a drug habit of the little-known but very dangerous drug "heroin." The sales of this drug have recently increased greatly, particularly in those states which have rigid laws preventing the indiscriminate sale of morphine and cocaine. Investigation of the subject establishes the fact that many drug victims who formerly used morphine and cocaine and who under the new laws find it difficult to obtain these substances have begun using heroin, the sale of which is not as yet as carefully restricted under State laws. The drug is said to be fully as dangerous as morphine and by many is held to be much worse, for the reason that it occasionally kills the victim outright and its habit is far harder to overcome than the use of the other drugs. The department, pending further action, specially warns all people who are unfamiliar with the drug to avoid all preparations containing the substance and to take it only on the prescription of reputable physicians.

Heroin, the consumption of which by drug takers has recently increased so markedly, is a derivative of morphine, the opium alkaloid. It is known in chemical parlance as diacetyl morphine,

and it is frequently found as a constituent of a number of proprietary drugs. Its use seems to be especially notable in parts of Pennsylvania. This year the coroner's office in Philadelphia County has held inquests on five sudden deaths from heroin poisoning. In each case the victim was a heroin fiend and was on a heroin debauch and took an overdose. The substance apparently is far more dangerous for drug users than morphine or cocaine. Drug fiends apparently are able to consume relatively large quantities of the other two drugs, but any sudden and material increase in the amount of heroin taken is very liable to prove fatal. As indicating the wide sale of this substance, it is known that one druggist in Pennsylvania whose store was located in an undesirable section of the city has been buying heroin tablets in 25,000 lots.

The labels of proprietary and other medicines purchased by laymen should be carefully scrutinized for a statement which is required by the National Food and Drugs Act of the quantity or proportion of heroin, or any derivative or preparation thereof.

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INFANTILE PARALYSIS SPREAD BY STABLE FLY.

Infantile paralysis as transmitted by the stable fly is the important discovery which Dr. M. J. Rosenau, professor of preventive medicine and hygiene at Harvard, announced to the fifteenth International Congress of Hygiene and Demography. Dr. Rosenau experimented with monkeys, the animals most closely resembling man. Twelve monkeys were infected with infantile paralysis. At different stages of the illness a large number of stable flies were introduced into the closely screened cages containing the monkeys. The stable fly bites. After a certain period the stable flies were transferred to cages containing well monkeys. These animals after being bitten by the flies developed all the symptoms of infantile paralysis just as they appear in children afflicted with the disease. Some of the monkeys died. Dr. Rosenau took tissues from the monkeys thus infected by the flies and injected them into a third set of monkeys, which thereupon developed the disease. A method for eradication and control of infantile paralysis is now placed in the hands of sanitarians. It is believed that the necessity of quarantine is thus relieved, and that it will suffice to place a bed net around the patient.—*Scientific American.*

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THE PURDUE FREDERICK CO., 135 Christopher Street, New York

ORIGINAL ARTICLES.

THE DIAGNOSIS OF SEPTIC ENDOCARDITIS.*

BY

W. GILMAN THOMPSON, M. D.,

Professor of Medicine, Cornell University Medical
College in New York City.

Among the chief difficulties in establishing the identity of septic endocarditis are the preconceived ideas that in this disease a widely fluctuating temperature, a high leucocyte percentage and high polymorphonuclear count are essentials in diagnosis, and further, that a single blood culture, which happens to be negative, necessarily excludes this diagnosis. It is also common to expect to find a definite focus of infection. Nevertheless the diagnosis often may be made in the absence of these criteria.

The temperature.—Although it is true that in many cases the temperature chart is, so-to-speak, spectacular, that is that it may present wide daily fluctuations, as for instance, between the normal or subnormal and 105° or 106° F. (I have seen 9° F. of daily fluctuation), nevertheless, in a considerable number of fatal cases, as shown by the accompanying charts, the temperature does not rise above 101° F. for weeks at a time. In some cases, moreover, there may be intervals of a number of days with practically normal temperature. For example, in a man 30 years of age who entered my service in the Presbyterian Hospital a few years ago, during a period of 3 weeks prior to his death, the temperature never rose above 100° F., nor did it ever fluctuate more than a degree and a half. At autopsy, vegetations as large as a mulberry were found on the aortic cusps and a few smaller ones on the mitral valve from which pure streptococcus pyogenes cultures were obtained.

Immediately prior to death the temperature usually rises abruptly, as it does in many diseases just before dissolution, perhaps as high as

106° F., but I have records in which there was a fall in temperature at this time, once as low as 97° F. In general the fever is characterized by great irregularity ranging through periods of many days, and by its prolongation, for it is liable to be extended over periods of many months, frequently longer than is the case with any other febrile disease. The cases due to the streptococcus viridans, although usually, if not invariably fatal, are particularly apt to present a low temperature curve throughout, or certainly through the greater part of the course of the disease.

The blood count is characterized by considerable spontaneous variation. It is most important to bear this fact in mind, for if the first count happen to be made at a time when it is nearly normal, it should not prejudice the diagnosis. As a general statement, it may be said that the leucocytes tend to rise to 16,000 or 18,000 and the polynuclear count to about 84 per cent., but I have records of several fatal cases in which the polynuclear count was below 60 per cent., in one case being only 53 per cent. I have also records of a number of cases showing a low maximum leucocytosis and a very low minimum count. For instance, in one case there was a spontaneous fall from 13,300 to 6,000, in another from 12,000 to 6,000. In another a maximum count gave only 9,500 and a minimum 4,500. This was a fatal case due to the streptococcus viridans. In another case a maximum count of 28,000 was succeeded a few days later by one of only 8,000, and subsequently the number rose to 17,000. No vaccine was used in this instance, so the fluctuation was spontaneous. On the other hand, I have met with leucocytosis of 45,000 and with polynucleosis ranging up to 91 per cent.

Blood cultures.—I would emphasize strongly the importance of not excluding the diagnosis of septic endocarditis by a single blood culture which happens to be negative, a difficulty which I have sometimes encountered in endeavoring to convince others of a positive diagnosis. Owing to the considerable variety of germs which may give rise to a condition of general sepsis with localiza-

*Prepared for and read at the 100th Anniversary Meeting of the Vt. Med. Society, Oct., 1913.

tion of lesions upon the heart valves, the technic of blood culture is highly expert work, and the results often vary in the same patient. In one of my cases seen during the past winter in the wards of Bellevue Hospital, two negative blood cultures were followed by a positive one revealing the streptococcus viridans. At autopsy a vegetation half a centimeter thick was found on the mitral valve, from which a positive culture also was obtained. In a fatal case in which streptococci were derived from the mitral valve, four successive blood cultures had previously proved sterile. In another very acute case due to the streptococcus pyogenes, five blood cultures were made before vaccines were given, three of which were positive, but the first and fourth were sterile. In another case a positive culture was first obtained after six trials. In another with six cultures, only the second and fifth were positive.

Petechiae.—The occurrence of petechiae in septic endocarditis, although usually mentioned in connection with the disease, is very inadequately described. For example, the only reference to them in Osler's text-book states that "Petechial rashes are very common and render the similarity very strong to certain cases of typhoid and cerebrospinal fever." I have never seen a case in which there was the slightest resemblance to the occasional petechial types of these diseases, for although the petechiae in septic endocarditis may exceptionally be very abundant, in the great majority of cases they are few, and exceedingly minute, more so than in any other condition in which they may be observed. Moreover, their distribution is peculiar. Dr. Walter L. Niles has pointed out from the cases studied in my wards, the frequency with which they occur exclusively upon the upper and anterior part of the thorax, but one sees them elsewhere also, as on the extremities, and a patient at present in my hospital service has them on both chest and abdomen. Often not more than three or four appear at a time, and it is only when more abundant that they occupy these latter situations. I have, in a previous article, drawn attention to their frequent presence, one or two at a time, upon the pharynx or hard palate, or upon the mucous surface of the lower eyelid, close to the cornea. In the latter situation they are slightly larger than when seen in the skin, being the size of a common pin's head, whereas in the skin they are often no larger than

the pin's point. So small are they that they are often overlooked unless the patient be placed in a strong light and very closely examined. In three cases which I have elsewhere reported (*Clinical Experiments with Homologous Vaccines in the Treatment of Septic Endocarditis, Am. Jour. Med. Sci.*, August, 1909), I observed petechiae in the conjunctiva and hard palate before they appeared in the skin. Last winter in Bellevue Hospital I happened to have two cases of septic endocarditis in adjoining beds in which there were conjunctival petechiae. One of these patients also had an embolic hemiplegia.

The petechiae of septic endocarditis are smaller and of a lighter red than the purple red color of the small naevi so often seen in the skin of the thorax and elsewhere. Unlike the naevi they are not elevated, and appear in successive crops, usually fading out in a few days, leaving a brown stain for a short time longer. In a suspected case daily search should be made for them, otherwise they may elude observation.

The heart condition varies greatly. Very many of the cases of septic endocarditis occur in young persons from 18 to 25 years of age who have had repeated attacks of acute articular rheumatism, in one or more of which an ordinary rheumatic simple endocarditis leaves a more or less damaged mitral or aortic valve. When septic endocarditis attacks such a heart, the previously observed murmur becomes louder and harsher, and shows considerable tendency to variation in pitch and duration from day to day. The heart, at the same time, usually becomes somewhat dilated and beats in a heaving, over-acting manner, with a very diffuse apex thrust. In other cases there is no history of previous endocarditis and upon first examination the heart sounds are normal, although constitutional symptoms may be marked. In other words, some days elapse before sufficient ulceration or vegetations develop upon a valve to produce adventitious heart sounds. Such a case is in my wards at the time of writing. On admission the man had normal heart sounds, but a temperature of 105.5° F., repeated chills and a pulse of 136. Two or three days later he developed a soft systolic aortic bruit which, within a few hours, became harsh and loud, petechiae appeared on chest and abdomen and the temperature rose to 106° F. and was accompanied by general pains and soreness in the muscles of the back and neck. There is no uniformity in the manner of involvement of

the heart valves. In my experience the aortic valve is more often involved than the mitral in older patients, in whom many of the causes of septic endocarditis operate without previous valvular lesions, at least which are demonstrable clinically. In young rheumatic subjects, on the contrary, it is often the mitral valve which is first affected by the sepsis because it has formerly been damaged by simple rheumatic endocarditis. In a number of cases, however, both valves are involved, as well as the chordae tendineae and entire endocardium. The accompanying photograph, from a case of primary septic endocarditis in an adult, illustrates very clearly the localization of the vegetations upon the aortic cusps with absolute immunity of the mitral valve and chordae. In this case, as in several others that I have seen, the mulberry vegetations reached a diameter of nearly two centimeters, covering a large part of the surface of the aortic cusp and filling up distended pockets in the cusp caused by thinning and stretching from ulceration.

The pulse gives evidence of the high degree of irritation to which the heart is subjected. It is often dicrotic and varies much in force and frequency. In a number of my records the pulse rate would become doubled several times in a single day, rising, for example, from 74 to 148 or more. In general the rate is quite rapid, most of the time averaging 120 to 130. The heart impulse is usually very diffuse and heaving in character. When one sees such a large vegetation as that shown in the accompanying photograph it is easy to appreciate that the interference with the heart action may be decidedly mechanical as well as toxic.

Hemiplegia is not an uncommon complication of septic endocarditis, in fact it is to be anticipated in cases in which the roughness and harshness of the valvular murmurs give rise to the suspicion that the vegetations are extensive. Hence it occurs in quite young patients from embolism. If the petechiae, which are also embolic, appear in frequent crops, hemiplegia is very liable to ensue. I have met with four cases of hemiplegia in the past two or three years in patients under twenty-five years of age. One of them was a girl of 17 years, from whose blood the streptococcus *attenuans* was isolated by Dr. T. W. Hastings.

My experience is that embolic infarcts of the spleen, lungs or other organs are much less

common although I have seen these conditions occasionally.

The *spleen* is very often palpable and may project 2 or 3 centimeters below the free border of the ribs.

Joint pains constitute a symptom which sometimes leads to erroneous diagnosis from failure to recognize that pain and stiffness in the joints, myalgia and peripheral neuritis are all common accompaniments of profound sepsis. This error is particularly liable to happen in patients who give history of earlier attacks of acute rheumatic fever, for in such cases there may be an attack of this fever which later merges into septic endocarditis. I have more than once seen such cases in which the patient for weeks had been deluged with salicylates, aspirin and other remedies highly depressing to the heart action, with the only effect of prolonging the patient's sweats and increasing his weakness and cardiac dilatation. Admitting that simple rheumatic fever is sometimes prolonged for several weeks, it is a safe rule if the temperature in such cases be protracted beyond a month, to suspect the presence of septic endocarditis and thoroughly examine the patient for petechiae, changes in the murmurs and size of the heart, and to insist upon repeated blood cultures. The pains of septic endocarditis, although annoying, are usually not at all proportionate in severity to either the cardiac or constitutional symptoms, whereas in acute articular rheumatism, the balance is the opposite. In sepsis, although the joints are painful and may contain purulent exudate, they are less red and acutely tender than in rheumatism. Besides, they are quite uninfluenced by salicylates, and although aspirin may relieve them temporarily, it is a poor remedy to use where the heart is weak.

Chills and *sweats* are two variable symptoms in septic endocarditis. They are present in most, although by no means all cases, and in the cases with spectacular temperature fluctuations they usually are pronounced. No doubt their presence and severity bears relation to the nature of the particular infection, but I have seen fatal viridans cases both with and without these phenomena.

General condition.—It is noticeable that in many cases in which the fever lasts for several months the patients do not emaciate excessively or become delirious. In fact they not rarely express themselves as feeling so well that it may

be difficult to persuade them to remain in bed. There are, however, exceptions, and one of the most extreme cases of emaciation which I have seen from any cause was that of a girl of 17 years who was ill for 5 months with the fever of septic endocarditis. The general condition probably depends, like many of the special symptoms, upon the species of germ causing the infection.

Focus of infection.—I have above alluded to the difficulty of always finding a definite focus from which the infection may originally have been derived which causes a septic endocarditis. In fact in the great majority of instances this is very difficult or impossible. The cases consequent upon a septic endometritis are plain enough, as are those due to abscesses in various parts of the body, or gonorrhoeal discharges, pyosalpinx, etc. Many no doubt originate through mouth infection as in the tonsils or from the pyorrhea of decayed teeth. Dr. William C. Thro has isolated the streptococcus viridans from both these latter situations in cases in my wards in which the same organism was obtained from the patient's blood and heart valves. The onset of the disease is often so insidious that original ports of entry of the infecting germ may have long been closed, so that the tracing of the etiological factor becomes impossible.

Prognosis.—Before the use of Wright's vaccination method the statement was frequently made that septic endocarditis was invariably fatal, and that if a suspected case ended in recovery, the diagnosis must have been erroneous. This statement, however, is not strictly correct, and while much depends upon the species of causative germ of the disease, there are a number of cases of recovery from both staphylococcus and streptococcus pyogenes infection, as well as from a variety of other organisms, in which positive blood cultures have left no room for doubting the accuracy of diagnosis and in which vaccines have not been used. The use of the latter, however, greatly increases the chances of recovery provided the case is not seen too late and that an autogenous vaccine may be made. In my experience the streptococcus viridans cases rapidly terminate fatally. In seven of the charts of cases of septic endocarditis shown with this article, 5 were of viridans type and ended in death, whereas recovery followed the use of vaccines in both a staphylococcus and a strepto-

coccus pyogenes case. In a report published in 1909 (*Am. Jour. Med. Sci.*, Aug., 1909), I gave the details of three more vaccinated cases which ended in recovery and meanwhile I have seen a number of others not included in the present article. There is therefore good reason for endeavoring to establish a diagnosis of septic endocarditis before the valve lesions have become extreme or possibly hemiplegia or other complications have made the use of vaccines futile. It is to aid in this matter that the foregoing summary of personal experience is given.

I have purposely excluded from this discussion all cases in which the diagnosis was not definitely confirmed, either by positive blood cultures in connection with definite signs of valvular inflammation or by post-mortem findings, or by both together. I have, however, met with many cases in which I was personally convinced of the correctness of the diagnosis, based upon other findings than positive blood cultures, and in conclusion these findings are summarized as follows:

1. The persistence of an irregular fever for many months, often being of low grade (100° - 101° F.), for weeks at a time, and sometimes with normal intervals of several days.
2. The absence of any other demonstrable lesions than those of the heart, and of any other adequate explanation of the fever than a protracted sepsis.
3. The finding of exceedingly minute petechiae, particularly about the neck and chest, or in the mucous membranes.
4. The development of loud harsh valvular murmurs, often in a heart which seemed normal under earlier examination, or which appear as accentuations of previously existing murmurs.
5. A condition of marked irritability of the heart as shown by overaction, and wide spontaneous fluctuations in the pulse rate and character, irrespective of the temperature curve.

Finally I would emphasize the probability in many otherwise obscure cases of primary septic infection from a pyorrhea alveolaris as in some of the cases above cited.

Mr. President and Gentlemen:

I was asked to discuss this paper which I have been very greatly interested in, as I am sure you have been, but very fortunately for me and for you also, Dr. Thompson has so well covered the whole situation that it leaves very little for me to discuss, nothing to criticise, but very much to commend. It appears quite certain from the doctor's studies that

the streptococcus viridans is a much more frequent cause of septic endocarditis than one would be led to believe from a perusal of the published records of other observers.

With respect to the finding of a focus of infection in septic endocarditis in my limited experience, it is exceptional to find a definite lesion upon the surface of the body, but in the absence of such it is not infrequently possible to demonstrate a focus or a possible source of infection from the mucous membranes of the upper respiratory tract.

I do not recall if my attention has ever been directed to it, that the petechiae occurs exclusively upon the extremities. I feel quite certain that in such cases as have come under my observation when septic endocarditis occurs as a part of a general infection that the petechiae were to be found upon the trunk.

With respect to the observations made by Dr. Thompson upon the results of the blood culture; the varying results and the high technical skill required in such work, we find the probable explanation of the negative finding of single cultures in undoubted cases of septic endocarditis.

In the gratifying report of his results from the use of vaccines in septic endocarditis, when they can be resorted to early in the course of the disease, we find abundant reason why we should, as he suggested, redouble our efforts to acquire the requisite technical skill to make the blood cultures; for devoting sufficient time and to making sufficiently frequent re-examinations of the blood as well as a careful study of the clinical features of the case, to the end that we may avail ourselves of the only promising therapeutic measure in this hitherto regarded invariably fatal disease, at a period in the course of the disease when only it is likely to avail.

JOINT TUBERCULOSIS.*

BY

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Tuberculous lesions of the bones and joints follow invasion by the tubercle bacillus, which gains entrance to the body by any of the usual portals of entry, and is carried to the part by the circulating fluids. Since a large proportion of bone tuberculosis is of bovine origin¹ and occurs in children who consume large quantities of milk, it has been supposed that the alimentary canal is the usual point of entry. In a given case it will be difficult to trace the infection, and for practical purposes this is unnecessary. Heredity plays a less important role in etiology than early surroundings, but lowered resistance from any source, either local or general, determines the individual attacked and the site of the local infection. Hence, it is common to find tuber-

culosis associated with any of the acute infectious fevers, especially typhoid, scarlet fever, measles, and influenza, and the frequent history of a preceding trauma is suggestive of the influence of locally impaired resistance in furnishing a suitable soil for the bacillus in the slight hemorrhage following the traumatism. At any rate the joints most often affected are those having the greatest range of motion and most exposed to trauma.

In discussing the subject before us it will be convenient to consider first the joints of the extremities, with the knee as a type, and leave the spine for separate study.

Pathology. There is at present much discussion as to the path by which the bacillus gains entrance to the individual joint. Some authors lay much stress on the arrangement of the terminal arteries in and about the epiphysis, and call attention to the frequent, if not constant, primary bone involvement. Thus Stiles of Edinburgh², while admitting the possibility of primary synovial disease, says that the disease is always hematogenic in origin, the primary focus being in a lymph gland, especially in one of the deep upper cervical set, in which caseation has occurred, allowing the escape of bacillary emboli, and these, lodging in the capillaries of the metaphysis set up a focus of disease; and he explains the frequency of knee involvement less by increased liability to trauma than to the fact that the nutrient vessels of the femur and tibia run toward the joint.

Ely of Denver,³ on the other hand, basing his observations on about 100 specimens carefully studied, believes that the course of the vessels has nothing to do with it, but that the tissues attacked are selected on account of their cellular structure alone. He believes that the bacillus attacks only certain cellular elements of the body and that this explains their presence in the lymphatic glands and other structures; but particularly that the only tissues about the joints affected are the red marrow of bone and the synovial membranes and the tension sheaths, while connective tissues of lower grades are immune unless their attack is reinforced by pyogenic organisms. Of these tissues the red marrow is most vulnerable, and hence most often the primary seat of the disease. It must be remembered that these opinions of Ely are based upon the

*Read before a meeting of the Chittenden County Clinical Society, Jan. 29, 1914.

study of the specimens necessarily obtained late in the disease, when extensive bone invasion has occurred, and that they do not take into account the cases recognized clinically which run a course to complete functional recovery without ever showing evidence of bone involvement, in which operative interference is not required and from which, consequently, no specimens are obtained for study.

Whatever may be true the route by which it arrives in the epiphysis or the reason for selecting an individual joint, there is no question as to the pathological process set up by the bacillus upon its arrival. An area of necrosis forms about the bacillary embolus and grows partly by impairing the nutrition of surrounding cells, but chiefly by the effects of toxins elaborated by the bacillus which destroy the cells in an increasing area, this forming a tubercle. The fusion of several such areas eventually forms an abscess cavity with walls composed of fused tubercles, the so-called pyogenic membrane. If destruction occurs very rapidly over a large area a sequestrum may be formed, otherwise the abscess contents consist of caseated cells and small masses of dead bone. This process of degeneration does not proceed alone, but is accompanied by reparative processes about the affected area. Epitheloid cells gather about and are surrounded by a more or less dense layer of round cells whose nuclei with those of the epitheloid cells form the characteristic giant cells. As repair proceeds dense fibrosis develops in the region of cells, inclosing and eventually obliterating the tuberculous nidus, this constituting nature's method of cure. Invasion of the joint occurs in these cases by extension of the abscess with destruction of the cartilage, and later involvement of the synovial membrane, in which thickening and infiltration occur. There is sometimes excess of joint fluid containing varying amounts of detritus, and pannus formation covers and erodes the cartilage. New bone formation does not occur in the joint unless erosion is complete and ankylosis is consequently fibrous except when erosion is so extensive as to leave no foci of active disease. Until all foci are destroyed by fibrosis or ankylosis, the processes of destruction and repair continue, and the disease cannot be considered cured. Hence

the danger of relying on nature's method of ankylosis for a permanent cure.

In the case of primary synovial disease the pathology cannot be stated, though there is sufficient evidence of a clinical nature to justify the belief that the process may occur without any bony involvement,⁴ or, more often, be primary in the synovia with late invasion of the bone, as is shown by those cases operated upon in which erosion of the articular ends of the bones is seen without a focus deep in the epiphysis, indicating an articular rather than an epiphyseal origin. When the joint is involved from without inward, erosion of cartilage occurs before synovial destruction, as would be expected and the cartilage, deprived of its nutrition, degenerates and becomes adherent to the underlying areas of erosion.

Symptoms. The symptoms of tuberculous as distinguished from non-tuberculous joint disease may best be studied from the following table modified from Brackett:—

TUBERCULOUS.	NON-TUBERCULOUS.
1— <i>Monarticular</i> usually. (9-13% have second joint.) Symptoms of toxic invasion of other joints often present (the tuberculous rheumatism of Poncet).	<i>Poly-articular</i> — Several joints involved with different degrees of intensity and different times of appearance of symptoms.
2— <i>Development</i> slow, with remissions extending over long periods of time, during which disability is slight; but never free from all symptoms. Swelling persists with some deformity, though this may be so slight as to escape all but the most careful observation on the part of the patient and surgeon.	Acute early stage. Development more rapid and progressive, both in the individual joint and in the different joints. Remissions not so marked, usually absent.
3— <i>Progress</i> —slow to complete disability.	Progress rapid.
4— <i>Pain</i> a prominent symptom. Present during attacks as joint sensitiveness, not present during remissions. Worse at night. Depends on amount of articular surface involved.	May or may not be prominent symptom, but is usually prominent.
5— <i>Swelling</i> is synovial, due to thick, vascular synovial membrane, and not to excess of fluid in the joint.	Not constantly present. Due to fluid.
6— <i>Temperature</i> normal or slight increase. Subnormal morning (97.5) or less, with slight evening rise (99) is pathognomonic (Jones).	Usually elevated.
7— <i>Abscess</i> cold.	Acute.
8—X-ray picture—characteristic of each condition.	

From the pathology it is evident that there are two more or less distinct types of the disease, one in which the joint structures are themselves chiefly involved, constituting a true articular lesion, and the other with involvement of structures adjacent to the joint but not involving the articular structures until late, and manifesting itself by reflex symptoms only. Not every case can be put at once into one of these classes, yet they are useful in studying the disease and as furnishing some indication as to the duration and character of treatment. In the *Articular Type* the symptoms are those due to active interference with the joint structures, thus immediately limiting its function and protecting from use.

In the *Peri-articular Type* the symptoms are due to involvement of structures not functionally active in the joint, and protection from the more severe activity is all that is required. Thus, pain or joint sensitiveness is a constant and severe symptom of the articular type, but is present in the peri-articular only during acute attacks, while spasm and limited motion are found only in the articular type where they are required for protection of the sensitive joint surfaces, the peri-articular disease showing only slight symptoms, such as slight limp, which meets all the requirements for protection from the extremes of use.

The following table from Brackett, presents these types in contrast⁵:

ARTICULAR TYPE.	PERI-ARTICULAR TYPE.
1—Pain (prominent symptom). severe, referred, sensitiveness.	1—Limp (prominent symptom).
2—Limp (not prominent symptom).	2—Pain. slight, referred, sensitiveness (absent).
3—Spasm marked.	3—Spasm, slight or absent.
4—Deformity marked.	4—Deformity slight.
5—Motion much limited.	5—Motion, slight limitation.
6—Disability marked.	6—Disability slight.
7—Atrophy marked.	7—Atrophy slight.
8—Onset sudden.	8—Onset slow.
9—Remissions absent.	9—Remissions marked.

Treatment. Three general indications are to be met:

1. Increase the constitutional resistance by the measures employed in all forms of the disease, consisting of rest, proper hygiene and diet, with especial attention to outdoor life in the sunshine. Cold, fresh air is not necessarily better than warm, fresh air. A cold room in winter is a dismal place at best, and it is doubtful if any advantage rests with out-

door treatment in cold weather unless the depressing tendencies are recognized and counteracted. Those systems of treatment consisting primarily of exposure of the whole body to direct sunlight have shown remarkable possibilities for cure both by Rollier in Switzerland and in various places in this country, notably in the hands of Forbes in Montreal, and Hammond in Providence. The method consists of gradually exposing the body to direct sunlight until a large part of the time is spent in the sun without covering. In Providence this has been combined with sea bathing with excellent results.

2. Keep the focus confined to its original location by conservative means or if necessary by operation.

3. Preserve function so far as possible by limiting motion only so far as is necessary to control symptoms. Spasm will disappear if the various groups of muscles about the joint are held in a position of balance. Such a position is usually the best for functional use in case ankylosis occurs. In the knee about 5" flexion, and in the hip about 20" flexion and 15" abduction will give the most useful limb in ankylosis. Hyperextension of the spine places the posterior muscles in a position which counteracts the disadvantage they are under in flexion. In other joints the same principles apply. A stiff ankle is more useful at about right angle to the leg, and the arm is useful if in a position that allows its use for feeding and dressing the hair.

Ely gives three rules for treatment in adults.⁷

1. Treatment must be radical.
2. It must abolish function.
3. Avoid secondary infection.

He bases these rules on his conclusions that the tissues involved are the red marrow and synovia, and that by abolishing function in these tissues they disappear, thus leaving no soil for the bacilli to grow on. He believes that the lymphocyte and similar cells bear the same relation to the T. B. that the red cells do to the plasmodium of malaria that is, not an antagonist, but a soil for growth. He says these tissues disappear after operation leaving the bacilli without food and they consequently die out unless by secondary infection, lymphocytes are brought to the place, hence the importance of avoiding secondary infection in all

surgery of tuberculosis. These conclusions are based on careful study of specimens from operations and autopsy, and deserve attention.

Reports on the results from the use of tuberculin for therapeutic purposes are not conclusive, but show a decided tendency to regard it as a distinct aid in many cases. There is, of course, no warrant for neglecting any of the other methods of treatment in its favor. Early cases in which injection of iodoform oil or other such substances has been done have shown excellent results in many clinics, but time will be necessary to allow of further study of the results before any very definite conclusions can be reached in these cases. The same might be said of the various pastes and injection formulæ for use in sinuses. Each of these, in the hands of its originator and enthusiastic followers, has given encouraging results, which have not always followed their more general use. Indeed, the results have been so different in different clinics as to make it seem reasonable that the virulence of the bacilli may differ under varying conditions of growth, or in different localities.

Prognosis. Danger to life is in proportion to the importance of the joint involved, i. e. greatest in the spine and hip. Prognosis is complicated by the fact that seldom do we have disease in the joint alone, the lymphatics at least being always involved, and from these dissemination proceeds to other organs. In adults it is common to find the lungs affected, making the prognosis much more grave. König gives the following statistics of mortality of all cases⁸:

Below 15 years.20% mortality.
 Between 16 and 30. . . .24% mortality.
 Between 30 and 40. . . .44% mortality.
 Between 40 and 60. . . .60% mortality.

Abscess greatly increases the mortality—

In hip without abscess.23%.
 In knee without abscess.25%.
 In knee with abscess46%.
 In hip with abscess52%.

Operation has been supposed to cause dissemination of the bacilli through the body, but Gibney, comparing two periods of thirteen years each at the Ruptured and Crippled, N. Y., in the first of which no operations were done, while many were done in the second, found

no proportionate increase in mortality. Similar reports have been made by other observers. The average duration of treatment is about four years, varying from three months to twenty-eight years. Operation in many cases hastens a cure, but in the presence of abscess it more often delays ultimate recovery from the disease, even if necessary to relieve dangerous symptoms.

Pott's Disease. The functions of the spine are two—weight bearing and protection. The first is provided for by the arrangement of vertebral bodies, the second by the spinal canal and its openings for the passage of nerves. Interference with either of these functions, or with both, may be seen in any case of Pott's, but frequently one or the other predominates. The primary focus is anywhere in the body of a vertebra. If situated anterior to the line of weight bearing there occurs a crushing of the anterior portion of the involved body interfering with weight bearing and producing marked deformity, but not necessarily disturbing the protective function of the column. These are the cases with marked kyphosis, and are usually accompanied by but little pain, though disability from mechanical interference is marked.

With a process situated well posteriorly the conditions are different. Here there is less destruction of the bodies, and the function of weight-bearing is not so seriously interfered with. Deformity is slight or absent, and there is less mechanical disability. Pain is a more common symptom, and abscesses are oftener seen. These two types may be thus tabulated.⁹

Type I. The disability type, presenting symptoms of

- a. Marked interference with weight-bearing function, as shown by attitude, spinal stiffness, and sensitiveness to motion.
- b. Little or no interference with protective function, pain in back and referred, and follows activity.
- c. Marked evidence of destruction of anterior part of vertebra, as shown by a knuckle and its rapid increase.
- d. Examination of pathological specimens shows involvement of anterior part of vertebra, of

adjoining vertebrae and intervertebral discs, with destruction of substance of vertebra, encroaching secondarily in direction of the spinal column.

Type II. The pain type, presenting symptoms of

- a. Marked interference with the protective function, as shown by pain as the chief symptom—referred and not associated with motion.
- b. Slight interference with mechanical function of spine, as shown by disability, change in attitude, and sensitiveness.
- c. Evidence of destructive process absent or slight, as shown by absence of antero-posterior deformity; deformity, when present, being usually lateral.
- d. Examination of pathological specimens shows localized disease in posterior part of vertebra, bordering on canal, not involving anterior part of vertebra in destructive process.

Cord pressure occurs with both types. In the anterior type it is due to the presence of a wedge shaped fragment of an eroded body which is caught between two adjacent bodies and forced backward by the falling forward of the vertebrae, until it encroaches upon the calibre of the canal. Pressure is then caused directly and involvement of the coverings of the cord occurs by direct extension from the eroded bodies.

These types have a bearing upon the extent and firmness of repair. With wide areas of erosion in adjacent bodies forming too well apposed surfaces not separated by remains of the intervertebral disc, ankylosis becomes firm and restores in a great measure the mechanical stability of the column, and when erosion has occurred in nearly horizontal planes there may be very little deformity. These cases present the most satisfactory natural cures. With less symmetrical erosion bridges of bone are thrown out at the sides of the bodies and even of the laminae and spinous processes in severe cases. The observation of these cases stimulated the experiments which resulted in

the plastic operations for the cure of this disease.

Diagnosis. The chief points in diagnosis are:

1. Attitude.
2. Pain.
3. Spasm.
4. Motion.
5. Deformity.
6. Complications.

1. Attitude. The spine is guarded in all positions, whether standing, walking or recumbent. In cervical disease the head is held in a position of wryneck or carried forward, and is protected from jars by being held in the hands. In early cases inability to open the mouth widely may be the only symptom.

High dorsal disease shows high, square shoulders, and a stooping position is often seen in disease lower down, or there may be lateral deviation with a focus at one side of the vertebral body. Such a focus is said to be very frequently accompanied by abscess.

Lumbar disease is characterized by forward or lateral bending of the whole trunk. In all cases attempts at motion show the classical, stiff, guarded back.

2. Pain is present both as joint sensitiveness and referred. Night cries of children are less frequent than in hip disease, but are still frequently present. The distribution of referred pain depends on the segments affected. Interference with respiration is seen in high lesions, while in low dorsal and lumbar cases the pain is abdominal or referred to the legs. Wholey reported a case¹⁰ in which for months the only symptom was backache, leading to the diagnosis of renal stone with operation, neurasthenia and other things, the true condition being discovered only upon the appearance of a typical cold abscess.

3. Spasm accompanies all motions whether passive or active.

4. All motions are limited. Respiration is shallow, the thighs cannot be hyperextended, and all attempts at motion demonstrate stiffness at the site of disease.

5. Deformity depends on the region, the number of vertebrae involved, and the stage of the disease. In acute stage it is sharp and may involve but one or two spines, later it becomes rounded and more vertebrae are in-

cluded. In the cervical region it is seen as an exaggeration of the normal curve, it is sharper in the dorsal, and presents merely a flattening of the lumbar curve.

6. Abscess and paralysis occur as complications.

Prognosis is decidedly unfavorable without treatment, complications being much more frequent in these cases, and early death the rule.

With treatment the course is from three months to twenty years, with three and a half years as perhaps a fair average. (Treves).

It is the most serious form of bone T. B. The mortality is over 30% in those treated for over five years, and 15% in those over 2 years. Cervical and lumbar cases recover quicker and with less deformity than dorsal cases. (Thorn-dyke). Paralysis is oftenest a complication of cervical disease, but visceral pressure is seen with dorsal lesions. Prognosis is better in private than in hospital cases, due largely to more constant outdoor life. "Children do infinitely better out of doors in a slum than in the most sanitary town hospital." (Robert Jones.) The things to be considered in giving a prognosis are:

1. Social condition.
2. General physical condition.
3. Stage when first seen and prospect for proper treatment.
4. Age (better in children).
5. Involvement of other joints or organs.
6. Region involved.
7. Presence of abscess (unfavorable).

Treatment. Treatment is designated to carry out the general principles laid down for all tuberculosis. In addition to the hygienic and general tonic measures that attention must be directed to the local focus, and this requires measures adapted to the different stages of the disease.

In the *acute stage*, with pain, sensitiveness and increasing deformity it is necessary to secure physical and functional rest. This stage lasts for months or years, during which the child should be kept recumbent on a frame of the well-known type designed by Bradford. Recumbency should be absolute, the position being maintained by suitable padding, or by bending the frame backward to secure hyper-extension. If the child is to be removed from the frame for any purpose, it must be done

by turning on the face with the head supported, and this position must not be changed while he is off the frame. Failure to observe these rules carefully means a longer acute period, and probably greater deformity, in the end.

The *stage of quiescence*, during which all signs of active disease are absent, lasts for years. Treatment during this stage allows of moderate functional activity in some suitable ambulatory apparatus, of which the plaster jacket is the most useful generally. Its application is a matter of considerable consequence, and many types of frames have been devised for the purpose, all having this at least in common, that they permit the application of a jacket in a position of hyperextension of the spine with the superincumbent weight removed, so far as possible from the area of disease. Obviously this is best accomplished by placing the patient in a recumbent position with pressure on the kyphos.

During the *convalescent stage*, when disability and all symptoms are absent, protection is necessary to guard against excessive stress, and should be persisted in for years, particularly in those whose condition in life demands that they shall earn a living. Apparatus may be made removable, but must be the more carefully fitted and frequent adjustments will be required, especially in younger patients, since harm comes from improper support or from the false sense of security given by the mere fact of wearing a brace. The braces most used follow the type of the Taylor back brace, modified to suit the requirements of the patient or the skill of the surgeon.

Complications. *Paralysis* occurs as a complication in about 5% of treated cases, and much oftener in untreated ones. It is due to an extension of the disease to the membranes of the cord, and to the cord itself, or to pressure from the deformity. It occurs more frequently in adults and is commonest in disease located between the third and sixth dorsal vertebrae. It is usually a spastic paraplegia, but may be flaccid, and sensory as well as motor paralysis often occurs, in which cases the sensory is the first to disappear. It is rare to find the arms and sphincters involved.

Treatment. Absolute rest in bed with the spine held firmly in hyperextension is the only treatment, and should be persisted in until

relief is obtained, or at any rate for many months. If this fails resort may be had to laminectomy as a forlorn hope to remove pressure from the cord, but the results have not been such as to warrant early operation in these cases. While it is frequently stated that no recovery is possible after two years of paralysis, without treatment one case at least was so improved⁴ after four years as to be able to get about the house on crutches, having been practically helpless in bed before treatment was begun.

Abscess. At some time in every case of Pott's disease of the spine there is probably an abscess, though in the majority of cases it gives no symptoms and is overlooked. The X-ray has demonstrated their presence in a surprising number of cases where none had been suspected, and in some cases supposed to be cured. Its origin is not always from the bone focus but may be from the mesenteric glands by direct extension, and this is doubtless the path of invasion in some cases of Pott's. Where a lateral deviation develops where there had been previously only a kyphos, abscess may be suspected. Rapid appearance usually means mixed infection, though this is not invariable. Young¹² found 50% of abscesses to contain sterile fluid, the others showing a great variety of organisms. Of the few abscesses that reach the surface, the most typical are the retro-pharyngeal, psoas, and lumbar, their size and point of appearance depending chiefly upon the point of origin and the arrangement of the fascial planes in that region.

Treatment. Since most abscesses are not recognized and are taken care of in the routine treatment of the case, it would seem to follow that no special treatment is necessary for the abscess itself, and this is so. Symptoms of pressure or rupture into a vital region demand attention. Many methods have been proposed for evacuation of these, from simple incision and drainage, with secondary infection as a certainty, to the most careful aseptic technique, by which the field is treated with all the respect accorded that of laparotomy, in the hope of getting a clean wound and healing by primary union. In many cases this has been accomplished with final disappearance of the abscess without mixed infection. This is, of course ideal, and cannot be

expected in those cases where the operation is undertaken to relieve distressing or dangerous symptoms. Various pastes have been used to fill the cavity after drainage and to promote healing by obliterating the cavity. Their results depend largely upon the enthusiasm of their originators. The best treatment is the one that nearest approaches Nature. Most abscesses should be left alone. If necessary to drain, good surgical judgment should be allowed to govern the selection of a method.

Operative Treatment. The first recorded operation on the spine in Pott's disease was by Hadra in 1891.¹³ He attempted to secure immobility of the vertebrae by figure of eight turns of silver wire around the spines, but without much success. Other unsuccessful attempts were made in various ways until in 1908 Lange succeeded with tin plated steel rods inserted through a small incision at the upper and lower end of the kyphos and secured along the sides of the spines by silk sutures. A plaster jacket was worn six weeks when it was replaced by one of celluloid, which was discarded after six months. The patient was well two years after the operation (a boy of ten, disease at 10 dorsal).¹⁴

The first osteoplastic operation was by Hibbs in Dec. 1910,¹⁵ and consisted of carefully elevating the periosteum from the spines and laminae to the transverse processes, and fracturing the spines as near their bases as possible. They were then turned upward, each to rest upon the bared base of the one above, and the periosteum carefully sutured back in place, covering the whole area. Proliferation of bone is expected to occur in sufficient amount to make a satisfactory posterior splint. The advantages of the operation are chiefly the reduction in size of the kyphos and the comparative simple technic. After treatment consists of recumbency on a properly fitted frame for 8 weeks, and a steel brace for six months. The danger from the operation is the development of a pseudoarthrosis which would be serious since the interspinous ligaments have been destroyed.

Albee's operation was first tried on a human spine in June, 1911.¹⁶ It consists of splitting the spines in a longitudinal direction together with the interspinous ligament forming a shallow gutter into which is fitted a bone graft from the crest of the tibia. Tight sutures of

kangaroo tendon are placed over the graft in the intervals between the spines. The after treatment consists of rest in bed for from five to twelve weeks after which no support is worn.

The advantages over the Hibbs operation are, a firmer splint from the first allowing a shorter after treatment and possibly a firmer ankylosis, and a shorter technique. Albee has done 176 cases, and says his "success has increased with the accumulation of cases." As between the two methods there is little to choose from a practical standpoint. In the hands of other operators results have been as good with one as with the other, and it is of course too soon to know what the final results will be. That uniformly good results have not followed operative measures is shown by the reports of cases at Sea Breeze Hospital by Nutt.¹⁷ In fifteen cases there at one time there were ten showing increased deformity after the operation, eight with spasm persisting. These were in patients from two and a half to six years old, in whom the disease had been present from six to twenty-four months, all but two having been in a fair or arrested stage at the time of operation. Nutt concludes the operation to have been beneficial in five, not beneficial in the remaining ten, and says "the danger in the use of the operation does not lie in the operation itself, but in the creation of a false sense of security, a feeling that a cure of a chronic disease has been produced, and a consequent neglect of other therapeutic measures." Nevertheless it seems likely that a careful selection of cases will give the operation an important place in our resources for treatment of Pott's disease of the spine.

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POLIOMYELITIS AND ITS PERIODICITY.

Poliomyelitis is again knocking at the gate. This disease has a biennial periodicity. The epidemics of 1907, 1909 and 1911 are remembered. This periodic recrudescence is not peculiar to any one locality, but is apparently a world-wide phenomenon, for it has been noted in Sweden, Austria and Germany, as well as in New York. The disease returns with a rhythmic precision that cannot be regarded as accidental. There is evidently a law governing the epidemiology of infantile paralysis. Moreover, localities that are visited by the disease during one epidemic in a given city are practically spared when the disease returns two years later. A plausible explanation of this phenomenon is the hypothesis that the population in general in a given neighborhood during an epidemic acquire a relative and partial immunity which protects the individuals and particularly the children during the next epidemic, which is compelled to expend its virulence on adjacent districts. Poliomyelitis has been regarded as a disease of hot weather, but there is no direct correspondence, as witness the September epidemic of 1911 in Brooklyn. There are signs, at this writing, that an epidemic is on its way. Cases are reported in New Jersey, Iowa, Michigan, Minnesota, Virginia, Ohio, Massachusetts, Wisconsin, Louisiana and California. Physicians in general should bear in mind the possibility of poliomyelitis in the presence of an obscure febrile illness in a child, even before the onset of paralysis, particularly if hyperesthesia and profuse sweating form part of the clinical picture.—*Medical Record*, August 2, 1913.

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EDITORIAL.

In no field of medical research have the last few years been fruitful of more practical results than in the study of syphilis. Nogouchi's irrefutable demonstration of the specificity of the *treponema pallida* and Ehrlich's production of Salvarsan have given a wonderful stimulus to students of this ages old malady. Which of these accomplishments is of the most value, it is hard to say, but both are achievements of tremendous importance to humanity for syphilis will still be one of the great problems of medicine despite the wave of social reform just now at its high flow. One of the results of the critical study of the spirochaeta has been to clear away the mist of doubt surrounding the so-called para-syphilitic affections of the nervous system. We now know that general paresis and locomotor ataxia are localized manifestations of the actual presence of the parasite and this has opened the prospect of curing or at least permanently arresting many of these cases. Sal Var-Salvarsan and the other mercurials have failed to give the hoped for results. The nervous system

seeming to be especially resistant to the influence of the drug. This has been explained, probably erroneously, as due to the selective action of the tissues of the charoid plexus which does not secrete the substance unchanged. As proof of this has been advanced, the undeniable fact that fluids of the cerebral spinal canal often show the Wassermann reaction long after it has disappeared from the general blood serum. The more probable explanation is that the cells of the nervous system do not have the affinities to take up 606 and that the spirochaetae are protected by these cells from the action of the germicide. To overcome this resistance, a method has been devised by Swift and Ellis of introducing salvarsanized serum from the same patient into the spinal canal. The method in brief consists of withdrawing blood an hour after the introduction of salvarsan or neosalvarsan and introducing the serum diluted with normal saline and heated to fifty-six degrees to inactivate into the canal by lumbar puncture in place of some of the normal spinal fluid withdrawn. While the method is yet young, its users are uniformly encouraging in their reports of results. It seems a distinct advance in the treatment of these hitherto hopeless cases.

The educational world hailed the establishment of the Carnegie Foundation as an un-mixed blessing. It promised to render more enduring the lot of the poorly paid educator, to assist many small colleges and encourage a more ambitious class of young men to take up the vocation of teaching. Now after five years of operation what are the actual results? The administration of these tremendous resources was placed in the hands of a self-perpetuating board of trustees. Active men of affairs whose time is occupied with a multitude of business interests. They in turn em-

ploy a director to guide the activities of the foundation. The originator's intent was unquestionably the purely altruistic one of advancing education in America. In pursuance of this purpose the trustees of the foundation through their director very early undertook a survey of medical education carried out strange to say by a layman. This investigator discovered a truly chaotic condition of educational institutions and standards and laid down a most drastic program of reform which comprised the closing of a very large percent of the then existing medical schools. This avowed purpose was laudable although there was much ground for difference of opinion concerning the details of the report and the proposed remedy. Here was first discovered a hint of a possible fly in the ointment—a suggestion that the pretty bee might have a sting. The foundation and the schools awakened to the fact that the pension provision furnished an instrument of punishment, as effective as the possible promise of reward held out by the endowment fund. The influence of this on higher education is dangerous. It touches it in its most vital spot, its independence. This baleful touch is sure to be felt in an institution from the board of trustees down to the youngest instructor. All are looking forward to the reward, the endowment in the one case and the pension in the other. In either case it is in the nature of a charity—an alms handed out to the institution or the individual teacher at the whim of the donor and in payment for no service rendered—a transaction of itself not conducive to the self respect of a man who has devoted a life time to education. The power vested in the administration of this foundation, as it exists, is a dangerous one to put in the hands of any self elected body of men and much more so if the policies are largely dictated by one man. Fortunate indeed if the man be broad enough to attempt no coercion in the enforcement of his opinions. It in effect places higher educa-

tion much in the position of a scared puppy kicked by a boot behind and coaxed by a bone in front.

Gynecologists tell us that one woman out of every eight dies of cancer and that a large proportion of these malignant growths develop about the menopause from lacerated cervices and are preventable if the tear is repaired in time, and that practically all can be cured by the knife in their early stage. If this is true, it is high time that a general educational propaganda be started. The public should be told these facts in clear, unmistakable language. Every woman who has borne a child should be thoroughly examined by a physician at least every three months when she approaches the menopause and during this transitional period. Every lacerated cervix should be immediately repaired. It wont do to leave the matter to the instincts of the woman herself as the uterine cancer produces practically no symptoms in its early stages and the natural dislike of consulting the physician will prevent the average woman from submitting to a vaginal examination until she is driven to it by symptoms which usually mean that the trouble has gone too far to be remedied. The gynecologist has a clear duty which he should not allow any false sense of modesty to induce him to neglect. He should accept every opportunity to address women's gatherings and tell in plain language the dangers and the proper procedure to avoid this peril. Medical societies, churches, and charitable organizations should join hands in spreading this propaganda. It is just as important to prevent cancer as tuberculosis. The general practitioner is oftentimes at fault in neglecting to make a thorough examination of women presenting themselves. Surgeons and gynecologists and medical teachers should impress the importance of thoroughness in these matters in such a way that the lesson goes home.

AMERICAN COLLEGE OF SURGEONS.

We are in receipt of the official booklet issued by the American College of Surgeons from which are clipped the following facts of interest:

HISTORICAL.

The American College of Surgeons was organized at a meeting held in Washington on Monday evening, May 5, 1913. Four hundred and fifty surgeons of the continent of North America came together at the invitation of an Organization Committee which had been appointed by the Clinical Congress of Surgeons of North America at its meeting in November, 1912. This committee consisted of Edward Martin of Philadelphia, Emmet Rixford of San Francisco, John B. Murphy of Chicago, Rudolph Matas of New Orleans, Albert J. Ochsner of Chicago, Charles H. Mayo of Rochester, Minn., Frederic J. Cotton of Boston, George Emerson Brewer of New York, J. M. T. Finney of Baltimore, W. W. Chipman of Montreal, George W. Crile of Cleveland and Franklin H. Martin of Chicago.

The invitations, which resulted in this large gathering of surgeons in Washington, were extended by the Organization Committee after a carefully prepared campaign in which each large university city on the continent was visited by a member of the committee who met, in person, a group of selected men brought together by a committee of three in each locality, which committee had been authorized by the Organization Committee to extend an invitation to the surgeons in their locality to meet the representative of the Organization Committee. These five hundred men who were invited to the meeting in Washington, four hundred and fifty of whom responded, represented all branches of surgery and surgical specialties.

ORGANIZATION.

At this meeting in Washington, called for the purpose of effecting an organization, the Committee on Organization presented a definite tentative plan, which plan included a call of the meeting, the presentation of by-laws, the presentation of resolutions, and a plan for the completion of the organization by the election of governing bodies and executive officers.

OFFICERS.

President, J. M. T. Finney, Maryland; First Vice-President, W. W. Chipman, Quebec; Sec-

ond Vice-President, Rudolph Matas, Louisiana; Treasurer, Albert J. Ochsner, Illinois; General Secretary, Franklin H. Martin, Illinois.

BOARD OF REGENTS.

J. M. T. Finney, Maryland; Albert J. Ochsner, Illinois; Franklin H. Martin, Illinois; George E. Brewer, New York; George E. Armstrong, Quebec; John B. Murphy, Illinois; Edward Martin, Pennsylvania; Frederic J. Cotton, Massachusetts; Herbert A. Bruce, Ontario; Charles F. Stokes, Washington, D. C.; William D. Haggard, Tennessee; George W. Crile, Ohio; Robert E. McKechnie, British Columbia; Charles H. Mayo, Minnesota; Harry M. Sherman, California.

SELECTION OF FELLOWS.

It was determined by the organization to admit surgeons to fellowship under two groupings: First, the charter members, consisting of surgeons of distinction and ability who have been in the practice of medicine not less than eight years and who, in the opinion of the Board of Regents, should be entitled to fellowship without the formality of an examination; second, those who should be required to submit to an examination or other test of qualification required by the Board of Regents. It was decided to limit the time of admission of the first group of charter members to November 1, 1914, and to postpone the admission of Fellows by examination until the Board of Regents had formulated detailed plans of a satisfactory nature for admission by this method, not earlier than November 1, 1913.

APPLICATION FOR MEMBERSHIP.

The Board of Regents at its earlier meetings announced that it would be the spirit of the association to open the fellowship to all competitors in surgery without favor. The Board of Regents is anxious to have every surgeon on the continent who can fulfill the membership requirements, become a Fellow of the organization. The General Secretary is therefore instructed to send application blanks to any legally qualified practitioner of medicine on the American continent who may signify his desire to become a member.

METHOD OF SELECTING FELLOWS.

The by-laws specifically state that the Fellows of the College "shall be graduates in medicine who are legalized to practice medicine in their respective states or provinces and who meet the qualification requirements

that shall from time to time be established by the Board of Regents."

THE FIRST CONVOCATION.

The first convocation of the American College of Surgeons occurred in the Gold Room of the Congress Hotel, Chicago, on the evening of November 13th, 1913.

The prospective Fellows were invited to sign the roll of membership at this place during the day. The roll was furnished in loose-leaf form, and a corps of assistants presided over the formality of signing in a manner to make it possible for a large number to be accommodated in a short space of time. Each page of the roll was headed by a pledge or contract, and to this the Fellow appended his signature and address.

FELLOWSHIP PLEDGE.

Recognizing that the American College of Surgeons seeks to develop, exemplify, and enforce the highest traditions of our calling, I hereby pledge myself, as a condition of fellowship in the College, to live in strict accordance with all its principles, declarations, and regulations. In particular I pledge myself to pursue the practice of surgery with thorough self-restraint and to place the welfare of my patients above all else; to advance constantly in knowledge by the study of surgical literature, the instruction of eminent teachers, interchange of opinion among associates, and attendance on the important societies and clinics; to regard scrupulously the interests of my professional brothers and seek their counsel when in doubt of my own judgment; to render willing help to my colleagues and to give freely of my services to the needy. Moreover, I pledge myself, so far as I am able, to avoid the sins of selfishness; to shun unwarranted publicity, dishonest money-seeking, and commercialism as disgraceful to our profession; to refuse utterly all secret money trades with consultants and practitioners; to teach the patient his financial duty to the physician and to urge the practitioner to obtain his reward from the patient openly; to make my fees commensurate with the service rendered and with the patient's rights; and to avoid discrediting my associates by taking unwarranted compensation. Finally, I pledge myself to co-operate in advancing and extending, by every lawful means within my power, the influence of the American College of Surgeons.

NEWS ITEMS.

Dr. Leonora F. Lathe died suddenly December 5th in Cambridge, Mass. She was born in Chester, N. H. and had been in Cambridge, Mass. many years. She was graduated in 1866 from the New England Medical College.

The removal of face blemishes such as moles, is liable to cause cancer, according to the French Academy of Medicine, which has been studying the subject. These "beauty spots" is is said, are often nursing grounds for cancer.

HARVARD MEDICAL SCHOOL'S NEW STANDARD.

Harvard's relinquishing of the college degree as a prerequisite to admission to the medical school has its regrettable phase. The plan was adopted in 1901 following the lead of Johns Hopkins, but remained sufficiently flexible to admit thoroughly worthy and ambitious young men without the advantage of college training. They were admitted by special vote and remained on trial until their worth had been proved.

In view of this degree of elasticity, it is not easy to see the need—other than the economic—to return to but two years of college work as a requirement. Medicine is today becoming so complex, the need for specialization and prolonged study are of such growing importance, that the physician has comparatively little opportunity to keep up in educational matters outside of his own particular field—a condition regretted most of all by the medical man himself. To give him the best general training before he embarks in his profession is therefore desirable. The medical authorities, keenly cognizant of this need, urge the Harvard undergraduate who intends to enter medicine not to take courses in hygiene, anatomy and physiology, but to devote himself to the general educational "background," the opportunity for which may not return.

Dr. C. F. Camp and Dr. L. L. Leonard have left Barre to locate at Asbury Park, New Jersey.

Dr. Grace Burnett whose home is in Brattleboro has opened an office there. She is a graduate of the University of Michigan, 1913.

Milwaukee, Wis., Jan. 20—The Wisconsin eugenic law, which provides for the issuance of marriage licenses only upon a certificate

of a clean bill of health, including a Wassermann test, from a physician, was this afternoon declared unconstitutional by Judge F. C. Eschweiler of the circuit court. The case will go to the supreme court.

The law is praised because of its movement toward suppression of sexual diseases, but is condemned because its enforcement is practically an impossibility.

The court held that, if the state wishes to exercise its right for preventing undesirables from marriage, it should assume the burden of weeding out the unfit, and thereby not cast upon the fit an unfair demand and thus materially impair an inalienable right.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

ANESTHESIA IN CHILDREN.

W. C. WOOLSEY, Brooklyn, N. Y. (*Journal A. M. A.*, September 13), points out the physiologic differences between children and adults which may affect the use of anesthesia in the former; lesser resistance and special sensitiveness to the chemical poison, the larger proportion of heat radiating surface to body weight, less developed nervous system, a smaller amount of blood, rendering hemorrhage more risky, a smaller nasopharynx, and especially the lack of the acquired immunity which exists more or less in most adults, must all be considered. Chloroform has its advantages in anesthetizing children but its greater toxicity should cause it to be avoided. In ether the local irritant influence becomes predominant, and a serious obstruction to breathing may be thus caused by spasm of the glottis, etc. If Crile's observations of toxic nerve assault or anoci-association are correct, we have reason to suspect real damage to the sensitive nervous system of the child from the extreme agitation and fear often caused by the induction of anesthesia. Woolsey thinks that nitrous oxid initiation of anesthesia is of sufficient value to warrant the acquisition of the skill necessary to employ it, and which he says can be easily acquired. Tracheal insufflation anesthesia in children is especially easy of performance and relieves one of any anxiety in regard to the inhalation of blood or mucus or of asphyxia. In children the glottis is easily reached by the guiding index finger of the left hand and the rubber catheter is introduced with the proper forceps. Sedative medication in the form of morphin products comes under the general head of contraindications in the extremes of life and hence is seldom or never used. "Initiation of the narcosis is accomplished in as speedy and certain a manner as is consistent with safety by the selection of one of two methods, viz.: Nitrous oxid gas or the essence of orange (25 per cent.) on a mask, followed by chloroform in carefully administered and intelligently observed dosage. These are followed by ether, in some way vaporized at a distance from the little patient's airways. The gas-ether sequence is to be preferred if handled in a proper

manner, and to be condemned if not so handled. The chloroform-ether sequence is safer than a poorly administered gas-ether." Woolsey describes his own technic for ordinary anesthesia and also his technic for adenoid and tonsil work. Nitrous oxid and oxygen is not generally satisfactory for the latter because of the cumbersome apparatus required and the degree of cerebral congestion favoring hemorrhage. For resuscitation in anesthetic collapse he believes that tracheal intubation offers the best means of quickly instituting artificial respiration. He mentions incidentally also the possible use of endotracheal artificial respiration in newly born infants where breathing has failed to materialize under the ordinary gymnastic manipulations. The article is illustrated.

SYPHILIS AND THE NERVOUS SYSTEM.

J. COLLINS, New York (*Journal A. M. A.*, September 13), considers the prevention of syphilis one of the most urgent and important problems for the physician and specially devotes his article to the diseases it produces in the nerve centers. The bulk of all organic nervous diseases is syphilitic. Not long since we were taught that involvement of the nervous system was a late manifestation of the disease; now we know that this is not so. The most serious of the organic diseases of the nervous system are syphilitic; myelitis and cerebral and spinal endarteritis may occur during the first months after the infection, and tabes and general paresis, which are exclusively due to syphilis, often display their initial symptoms within five years. The conceptions of parasyphilis and metasyphilis have been a drawback, he says, in our treatment; now we know that syphilis is syphilis, no matter in what form it is encountered. The Wassermann reaction shows us this, though it may not be strictly specific. In the Neurologic Institute of New York, a hospital devoted exclusively to nervous and mental diseases, the Wassermann reaction has been tested upwards of ten thousand times in a great variety of nervous diseases, and in all these the evidence of syphilis agreed with the clinical findings and the positive reaction. The negative Wassermann reaction does not, however, necessarily exclude syphilis. The treatment by the rank and file of the profession of the present day is the old one of mercury by the mouth for a year, mixed treatment for another year and after that the iodids alone. He does not say that this is practiced by all, but for one case properly treated and controlled by the Wassermann reaction, he believes that twenty are treated in the old-fashioned way. The old beliefs are regrettably still held by the majority and are even taught in some places. Syphilis is not a local disease and its primary manifestation is not by any means necessarily the classical chancre. The spirochete may enter the body in various ways and the sooner we can get at it with a spirochetecide, like salvarsan, the better. Hence it is dangerous to wait for secondary manifestations, and from his experience as a neurologist he believes it dangerous to trust to mercury by the mouth. It is more than likely that there are definite strains or varieties of the spirochete and that one of these may affect the nervous system as others do the skin. This cannot be proved at present, but it is scarcely a coincidence that so many of Collins' syphilitic patients had a history of light primary attacks. He says one may have a light attack of diphtheria or

typhoid and be properly congratulated, but to have a light attack of syphilis is comparable to being introduced to the executioner a long time prior to execution. With the present difficulty of obtaining reports of cases, statistics of the number of syphilitics developing nervous diseases are out of the question. In conclusion, Collins discusses the clinical and therapeutic value of the Wassermann reaction and the dangers and comparative values of salvarsan and neo-salvarsan. He thinks the dangers have been exaggerated. In nearly 1,000 administrations of salvarsan he has seen serious consequences in only one case, an apparent myelitis which recovered in four months, and was probably edema rather than inflammation. Severe toxic effects have been observed in four cases similar to acute arsenical poisoning but readily yielding under treatment. Salvarsan, he thinks, is more efficient than neo-salvarsan, but though the latter has some advantages in administration, its effects are not so good.

SPIROCHETA PALLIDA IN PARESIS.

U. J. WILE, Ann Arbor, Mich. (*Journal A. M. A.*, September 13), describes the results obtained by Forster and Tomaszewski in using the method of brain puncture to demonstrate the presence of the spirochete in the brains of living paretics. He has been permitted to assist in two of the operations, to substantiate the microscopic findings and to report them here. The method was by drilling a hole through the skull under antiseptic conditions, and drawing out by suction with a syringe a small cylinder of brain substance containing both gray and white matter and more or less fluid from the ventricle. The operation is very simple; one has only to avoid the cerebral and meningeal vessels or any important centers. In twenty cases examined the spirochetes were found in the gray matter in eight. This confirms the discovery of Noguchi, which has effectually disposed of parasymphylis so far as the central nervous system is concerned. The opinion has been expressed that the organism is not present in every case of paresis, but these later findings, considering the large proportion of cases and the very small quantity of brain substance examined, make it more rational to believe that it is present in all cases. It is not too much to hope, Wile says, that the demonstration of the spirochete in cases where the cortical centers are not much involved may have valuable therapeutic bearings. It has hitherto been assumed also that paretics could not transmit syphilis. The discovery, however, of the organism in the living brain of such patients throws more than a shadow of doubt on such a view.

SALVARSAN BY ENTEROCLYSIS.

L. OULMANN and J. L. WOLLHEIM, New York (*Journal A. M. A.*, September 13), describe a method of administering salvarsan and neo-salvarsan which is almost unique, they having found only three mentions of a like procedure in the literature. The method is simple. The evening before treatment the patient is given a dose of saline to completely empty the bowels and then directed to take a rectal douche of soap solution about an hour before coming for treatment. If this is in the forenoon he is to take no breakfast, but if in the afternoon he may take a light breakfast and take his enema an hour

earlier than otherwise. The points insisted on are that he should be hungry, thirsty, and empty. He is then placed on the table and given a hypodermic of morphin; children are given paregoric by the mouth. He is then placed on his right side in the semiprone position with the head of the table tilted down and the rectal tube is passed up as far as possible. The solution is prepared exactly as with the intravenous method except that it is made exactly 240 cc. The apparatus is described; the injection is given at the rate of sixty drops per minute, or so that it will take just one hour for the 240 cc. to pass into the patient. They have seen a rapid injection retained but do not recommend it. They have given in this way 37 injections to 30 patients and have seen all the manifestations of syphilis clear up under the treatment apparently as quickly as by the intravenous method. The authors conclude that it has its place in therapeutics but should not generally replace the intravenous method, which has the advantage of possibly more thorough absorption. The enteroclysis method should be used in preference in children and be chosen whenever the intravenous method is not feasible. They say that the subject is worthy of further study to determine its exact place in the therapeutics of the disease.

FOREIGN BODY IN THE UTERUS.

The use of foreign bodies introduced into the cervix for the purpose of preventing conception and especially of one sold for that purpose as a sure preventive under the name of the "Jentsch self retaining uterine tube," is noticed by AIMÉ PAUL HEINECK, Chicago (*Journal A. M. A.*, September 13). He reports a case in which such a tube had slipped into the uterine cavity and had produced incomplete abortion with profuse hemorrhage. Concerning other experiences with such tubes he says: "1. Once inserted, they are difficult to remove; in two of my patients, a unilateral division of the vaginal portion of the cervix was required to effect the extraction of the instrument. 2. They do not prevent conception. 3. They not uncommonly induce abortion or miscarriage. 4. They may cause infectious phenomena productive of invalidism."

THREE OPHTHALMIC QUESTIONS.

The three ophthalmic questions discussed in his chairman's address at the Minneapolis meeting before the ophthalmology section by Dr. HIRAM WOODS, Baltimore (*Journal A. M. A.*, September 27), are optometry, conservation and education. As regards the efforts of the tradesmen desiring elevation to the rank of the profession, he thinks it should be taken up by a special committee of the Council on Health and Public Instruction of the American Medical Association. The present situation is a social rather than a scientific one and it is the former which gives the optometrist his greatest strength. As regards conservation of vision he thinks the national movement has thus far been comparatively ineffective because its work was started before the proper basis was laid. What is needed, he says, is the organization in the medical ranks of every state, a society to keep at work until the general profession has learned its duties and the philanthropists and the legislators theirs. Recommendations as to ophthalmologic instruction published in the Educational

Number of the Bulletin of the A. M. A. are taken up, and he gives the results of a questionnaire sent to teachers of ophthalmology in our medical schools. Replies have been received from thirty-six out of sixty institutions and these are summarized and discussed. He says the first step in the proper teaching of ophthalmology has been taken—insistence on preparation in graduation life. The next is training in method and simplification, and formulation of that method in our present problem and it is a most complex one. Adequate post-graduate facilities will be furnished, but this is only a first step. One thing, he thinks, should be insisted on—avoidance of such detailed instruction as will by its very length hinder its general acceptance. This is one of the economic problems we have to meet. Another is some regulation of state license for special practice. It is a matter for congratulation that the American Ophthalmologic Society has appointed a committee of such men as Drs. de Schweinitz, Risley, Weeks, Standish and Jackson to study this post-graduate problem with a special reference to a degree of doctor of ophthalmology.

GLAUCOMA.

Certain questions regarding glaucoma in its modern aspects are discussed by R. SATTLER, Cincinnati (*Journal A. M. A.*, September 27). The recent additions to our knowledge, he says, contribute more to the question of its origin than to its many-sided clinical symptoms or to its pathology. Later writers concern themselves more with the question of which is the first and actual factor: the assumed chemical and intra-ocular changes which lead to blindness or simply the increased tension? In the acute forms blindness is often coincident with sudden high tension and certain prodromal symptoms, while the pathologic changes that have been so much studied in the chronic and gradual forms appear later. In acute disease high tension is always present, but in the chronic it may be even in doubt. There is a certain compensatory ability to resist tension in the normal eye. If, however, through developmental aberrations of fetal existence the elasticity of the globe is somehow lessened, or this occurs in senescence, the equilibrium is disturbed. We may have a clinical picture of glaucoma either congenital or senile. We note in such cases how first the normal resiliency of the globe is lost and later every compensating property of the eye. We may assign this to the uveal tunic with Henderson, or to peripheral overgrowth of the lens with Priestly Smith, or with Leber to pathologic changes of the iris angle blocking the outflow lymph, or other possible explanations, each of them deserving a partial recognition. "Can it be assumed," Sattler asks, "that the same changes occur in acute inflammatory glaucoma as occur in senile or congenital cases?" He thinks that acute glaucoma belongs to a category of its own. It depends on many exciting causes which vary with the individual's tissue and psychic conditions. There is one established fact that a correctly performed iridectomy at the proper time will bring relief and save vision in most cases. To many there is an analogy between uveitis and glaucoma and a like mystery as to the origin of both. Sattler thinks that in physiologic chemistry we see a hope of determining the alterations of the lymph in these conditions. He refers at some length to the work of Heerfordt in this connection. Picking up the question of the prob-

able identity of developmental or senile expressions of glaucoma simplex it seems to him that they depend on the same anatomic causes. Whether the same is true as regards acute inflammatory glaucoma, congenital and senescent, it is impossible for him to say from his observations. But one case of acute inflammatory glaucoma, possibly congenital, but more probably originating in adolescence, has come under his observation, and is here reported. He thinks, however, that it seems clinically probable that there is a kinship between congenital and senile glaucoma, and that the remote causes of the latter may date back to the pathologic conditions in the former. From his experience with glaucoma simplex, surgery is indicated only when an eye still possesses some of its natural compensating properties of the sclera and uveal tunics, but surgery is as successful now for acute inflammatory glaucoma as it ever has been. A pseudoglaucomatous condition should be differentiated from the true type. These conditions have only the cardinal symptoms of high tension in common, and surgical treatment for it alone is not justifiable and miotics have little effect on inevitable conditions in pseudoglaucoma which happens most frequently as the result of hidden or unsuspected degenerations of the ocular circulatory system, almost always as the expression of pronounced cardiovascular and renal causes. When one can make a positive diagnosis of such cases, one can only temporize with anodynes and later, if necessary, enucleate. In conclusion, Sattler mentions Fischer's views in regard to glaucoma, which he criticizes, but he thinks he is among the first in forecasting new discoveries in physiologic chemistry, which will in time aid in solving the mystery of the origin of glaucoma.

INTRA-OCULAR PRESSURE.

The following are the conclusions of a lengthy article (*Journal A. M. A.*, September 27), reporting an experimental study of intra-ocular pressure and ocular drainage, by MARK J. SCHOENBERG, New York: "The intra-ocular pressure, as measured by the Schiötz tonometer, records three factors: 1. The elasticity of the cornea and sclera. The tension of the capsule of the eyeball under the stress of the intra-ocular fluids. 3. The condition of the ocular drainage system of the eye. The study of the ocular drainage has revealed the following facts: 1. There is always a gradual reduction of intra-ocular pressure if the tonometer is applied on a normal eye for a certain number of seconds. 2. The rate of reduction of intra-ocular pressure varies not only in various eyes, but also in the same eye if taken at different periods. The rate fluctuates within certain limits not yet determined. 3. The ocular drainage seems not to be affected by inflammatory changes in the cornea and iris in rabbits' eyes, while the intra-ocular pressure varies according to the condition of the eye at the time of the examination. 4. Experimental evidence seems to indicate that changes of intra-ocular pressure in one eye may often be followed by similar changes of intra-ocular pressure in the other eye. 5. Neither the experiments on rabbits and cats nor the examination in the operating-room give any clue regarding the existence of a reflex or hormone action starting from some distant organs and influencing the intra-ocular pressure. Attention is called to the fact that in a large percentage of cases the intra-ocular pressure rises dur-

ing the ether anesthesia above the normal limit. 6. As few and as little conclusive as are the examinations of the intra-ocular pressure before and after total tenotomies performed in my experiments on rabbits, theoretical considerations and physiologic experiments speak in favor of the probability that the extra-ocular muscles play an important role in the various normal fluctuations of the intra-ocular pressure. 7. The ocular drainage in glaucomatous eyes differs from that of normal eyes. The slower the rate of drainage, the nearer the eye is to an acute attack or to absolute glaucoma; the more rapid the rate of drainage, the nearer to a state of compensated glaucoma. A reduction of the rate of ocular drainage may mean latent glaucoma in spite of an intra-ocular pressure which is within the normal limit (below 26 mm. Hg). The continuous fluctuations in the intra-ocular pressure and ocular drainage in normal eyes, the relative dependence of the intra-ocular pressure on the general blood-pressure and of the latter on the ductless glands, and the probable relation existing between the intra-ocular pressure of both eyes, suggest that the present tendency of devising all possible operative procedures for the relief of intra-ocular pressure in glaucoma is only palliative measure. It is not rational. The essence of glaucoma is not an increased intra-ocular pressure, just as a high blood-pressure is not the essence of arteriosclerosis." A table of the effect of the results of suction or massage in the patients whose cases are reported on the intra-ocular tension is appended.

HYDROPHTHALMOS.

W. ZENTMAYER, Philadelphia (*Journal A. M. A.*, September 27), having seen within a short period several cases of this rare condition, all three of which were in negroes, and in two of which there was a strong suspicion of hereditary syphilis, reports two of the cases. One of them also presented a congenital coloboma. Hydrophthalmos (Butthalmos, congenital glaucoma) is, he says, a condition due to intra-ocular hypertension probably arising from anomalies of development or of prenatal inflammation in the anterior segment of the eyeball. Some evidence of the disease is usually present at birth or within the first six months. Collateral or direct heredity has been traced in some instances. It is more commonly bilateral and most frequent in males; the greater elasticity of the young eyeball explains the different effects of hypertension here from that in the adult eye. After describing the condition Zentmayer goes somewhat at length into the discussion of the etiology and pathogenesis, and then takes up the question of treatment. The value of iridectomy in adult glaucoma has made it the selected operation in many cases, and Zentmayer gives the replies of a large number of surgeons to letters addressed asking them as to their experience with operative measures for this condition. The analysis of these replies shows that iridectomy gave fair results to 42 per cent. and poor results to 58 per cent. of the operators using them. Sclerotomy gave fair results to 28 per cent. of the operators and poor results to the rest. Paracentesis of the anterior chamber gave unsatisfactory results to all. Sclerectomy gave satisfactory results to 40 per cent., encouraging to 20 per cent. and unsatisfactory to 40 per cent. of the operators employing it. None of them obtained satisfactory results from cyclodialysis and miotic treatment was on the whole also unsatisfac-

tory. Sclerectomy seems to be the only satisfactory method to the majority of those who have used it. The dangers of the other operations are pointed out. The anatomic study of the excised globes, both microscopic and macroscopic, Zentmayer says, "lends additional support to the view that the essential factor in the production of hydrophthalmos is an absence or incomplete development of the canal of Schlemm, and that a probable contributing factor is the presence in the angle of the anterior chamber of prenatal connective tissue."

PHYSIOLOGIC OPTICS IN OPHTHALMOLOGY.

W. B. LANCASTER, Boston (*Journal A. M. A.*, September 27), insists on the importance of teaching physiologic optics in ophthalmology, and shows how it is required in practice in diseases of the eye. He criticizes the present methods of instruction and the inadequate teaching in medical schools. Nowhere in this country, he says, has there been a regular systematic course in physiologic optics afforded and he thinks that this defect should be remedied, and that in the preliminary education of the future ophthalmologist a great deal more stress should be laid on physics and mathematics; the latter covering algebra, geometry and some trigonometry. Still higher mathematics would be advantageous but are not absolutely essential. It would be wise, he says, to avoid making the work too exclusively laboratory, scientific and theoretical; but rather to carry on the laboratory and practical and clinical sides together. There is danger of the two getting out of touch with each other. Another suggestion made is to require the student to solve problems in great abundance, and it would be of advantage to have them make or set up some of their own apparatus. It is clear that the course cannot be covered in a few weeks and he gives an estimate of the number of hours required for each of its parts. While there is much here for discussion the need of some such training is sufficiently obvious.

TRACHOMA.

J. McMULLEN, Washington, D. C. (*Journal A. M. A.*, September 27), thinks that further investigations will show a much wider extension and prevalence of trachoma than has been generally supposed. It has been believed that the negro was immune, but numbers of well-marked cases are received in negroes from the West Indies. He describes the very thorough methods used at the immigrant depots at New York and elsewhere, but in spite of these, 2,500 aliens suffering from trachoma were certified at the depots during the fiscal year of 1910-1911. There were much fewer admitted than was formerly the case, and during the past fiscal year only 718 cases were detected among 725,000 arriving there. The steamship companies have established near the German border detention stations for immigrants from Eastern Europe, and during the voyage the ship's doctor is supposed to make a daily examination and isolate those infected. If on arrival a case appears suspicious, it is sent to the immigration hospital for treatment and diagnosis, and if the diagnosis is confirmed the patient has to be deported. The diagnosis and prognosis is the most troublesome subject with which the medical examiner has to do. Well-marked cases give no trouble, but the borderland or

quiescent cases are often puzzling. A mistaken positive diagnosis is naturally an important one to the immigrant. The disease is essentially chronic and rapid cures are probably mistaken diagnoses. There is no question as to its communicability, but, though resistant to treatment, it is curable and should be attended to before coming to this country. It is a public health problem of the highest importance, and too much attention cannot be given to its control.

TRACHOMA AMONG THE INDIANS.

J. W. SCHERESCHEWSKY, Washington, D. C. (*Journal A. M. A.*, September 27), summarizes the results of an investigation by the Public Health Service ordered by Congress in regard to the prevalence of trachoma in the Indian population of the United States. Owing to the short time allowed and the physical difficulties on account of the scattered population, etc., only 39,231 Indians were examined, 22.7 per cent. of whom were found to have trachoma. Allowing the same ratio for the whole Indian population, there must be some 72,000 cases of the disease in the country, not including Alaska. A table is given of the percentages in the different states, ranging from nothing in Florida and only a fifth of 1 per cent. in New York to 68.72 in Oklahoma. Other states of high rate of prevalence are Wyoming, with 51 per cent.; Nebraska, with 41 per cent.; Utah, with 39 per cent.; Arizona, with 24 per cent., and New Mexico, with 22.38 per cent. Much importance is attached to the prevalence of trachoma in Indian boarding-schools, and its percentage was found to be higher than the general percentage for the whole number examined, and that in the Indian day schools on the reservations and in the reservations from which the pupils were drawn. It would seem, therefore, that the boarding-school is an important factor in the spread of trachoma, and this inference is strengthened by the correspondence of the prevalence of the disease in them and that in the reservation on which they are situated. Among the reservation Indians themselves, the prevalence of the disease, while high, was distinctly lower than that in the boarding-schools, though the severest cases of damage from this cause were most numerous. School age seems to be the one most liable to the disease, and the incidence was greater among full-bloods than among the mixed. A complete census would be required to ascertain the total amount of blindness due to this cause, and the day and date of its first appearance is still conjectural. The climatic conditions, habits and housing of the Indians are also factors to be considered as favoring its dissemination. The opening of the reservations to the whites and the probable mixture of the Indians among the general population makes present conditions a serious menace to the future white population of the Indian reservations.

TRACHOMA IN KENTUCKY.

J. A. STUCKY, Lexington, Ky. (*Journal A. M. A.*, September 27), describes some of the conditions existing in the Eastern mountain counties of that state as regards the occurrence and spread of trachoma. The clinic from which he draws his material was founded in connection with the W. C. T. U. Settlement School at Hindman, in one of the most remote mountain districts, and has been conducted semi-

annually since 1910. He has not met with the acute form of the disease to any extent, but has treated hundreds of cases in the second and third stages. There can be no doubt as to the infectiousness of the disorder. He has rarely met with only a single case in a family, they were almost always multiple. Some people seem to have, however, an unaccountable and unexplained immunity in spite of the utmost recklessness as regards exposure, and he has seen cases where the disorder was confined to one eye, the other remaining unaffected. He is forced to conclude, therefore, that there must be some condition of the conjunctiva rendering it immune to the disease. The patients were of all ages, and trachoma and hookworm seem to be the most common ailments. He appeals to members of the profession to give more attention to this disease among Americans of that section.

THE FRIEDMANN "CURE" LIBEL SUIT.

An Attempt to Bluff the Journal Into Silence

As we went to press last week, the newspapers announced that a libel suit had been entered against the American Medical Association for \$100,000, the libelous articles being those *The Journal* has published regard the Friedmann "cure." The suit is brought in the name of Dr. J. J. Meyer. While the newspapers refer to him as a physician of Milwaukee, he is, as a matter of fact, a New Yorker, who represents the concern that is commercializing the Friedmann "cure," purchased, it is said, by the Eisner-Mendelson Company of New York.

So far, *The Journal* has not mentioned the name of any individual connected with the Friedmann exploitation in this country, the wretched business having been dealt with only in a general way. Now it becomes necessary to be specific. This Dr. J. J. Meyer, who suddenly steps into limelight, seems to be employed by the "Friedmann Institute of New York, Inc.," to go about the country "demonstrating" the administration of the Friedmann product in behalf of the so-called Friedmann institutes. The "Friedmann Institute of New York, Inc.," is located at 90 West Street—the address of the Eisner-Mendelson Company, the reported purchasers of Friedmann's "cure." The letters sent out by the "Friedmann Institute of New York, Inc.," are signed Moritz Eisner, president of the Eisner-Mendelson Company. The Eisner circulars describe Meyer as a "specialist in the administration of Friedmann's vaccine." In selling his professional services to aid and abet the Fried-

mann institutes in their methods of exploiting the tuberculous, Meyer disgraces the name of physician and deserves to be classed with other "consumption cure" promoters.

Linked with Meyer's name is that of David S. Rose, who appears as one of Meyer's attorneys. Rose is the western representative of the Friedmann concern. He is something of a politician and will be remembered, at least by Wisconsin physicians, as an ex-mayor of Milwaukee; he also will be remembered by some for his connection with the "Twin Buttes Mining Company." In the minds of many Wisconsin physicians, Rose's connection with the Friedmann "cure" will merely confirm the opinions which they already hold, of both the man and the "cure." Rose has been writing to the Milwaukee newspapers, thus getting some free advertising both for the Friedmann "cure" and incidentally for David S. Rose. He claims to be an "authority on this subject and entitled to be considered as such." Rose tells the public that the Friedmann cure is a success! Physicians sufficiently expert to be employed by the United States government have declared otherwise. Rose expresses great confidence in the "cure"! A committee of the foremost physicians in Canada thoroughly investigated it and declared that "nothing has been found to justify any confidence in the remedy." Rose is enthusiastic in his praise of the "serum"! German physicians generally, and the Berlin profession in particular, condemn it. Rose thinks it a great therapeutic advance! Physicians from the Rhode Island State Sanatorium, reporting the results in 120 cases, state that patients who took the Friedmann "treatment" were worse off than if they had taken ordinary sanatorium treatment. The preposterousness of such a man as Rose posing as an authority on a subject of this sort ought to be evident to the public. Rose may be an authority on ward politics, he doubtless knows a good deal about mining propositions, and as a general all-around salesman he unquestionably has the advantage of physicians. When it comes to therapeutic products, however, he knows just as much about them as the veriest street-corner pedler who dispenses Dr. Quack's Sure Specific—and no more. That the defenders of the Friedmann "cure" are men of this type speaks volumes.

When the fallacy—if not fraudulence—and the danger of Friedmann's remedy came to be fully

realized, it seemed evident that no high-class firm would have anything to do with the exploitation of the product. And none has. According to reports, the concern with which Friedmann finally concluded his commercial "dicker" was that of the Eisner-Mendelson Company of New York. It is not a company that from its history would inspire confidence. First incorporated in 1886 under the laws of Pennsylvania, it seems to have gone out of existence in 1892, to be immediately reincorporated under the same name in West Virginia. In 1900 the courts sustained an award of damages against the company for trade piracy. The company put on the American market a mineral water, the bottle and label of which infringed the rights of the owners of a well-known aperient water. The court declared that the company intentionally imitated the label "for the purpose of obtaining . . . a part of the good-will which the ——— water had gained." The court went on to say that there was "nothing to show that it was not a case of undisguised piracy." The Eisner concern was assessed damages to the extent of approximately \$30,000. In 1902 the company was again reincorporated, this time under the laws of New York. Still later—in 1907—there seems to have been one more reorganization, again under the same name but this time in the state of Maine! At various times the company has attempted to sell its stock to physicians and as late as May, 1913, a stock and bond concern of Chicago circularized physicians in a similar attempt, stating as an inducement, that "this company has lately acquired the Friedmann cure." It seems entirely fitting that such a concern should be the one to exploit Friedmann's grossly commercialized "cure."

The Journal is ready to meet in a court of law, on the proposition laid down, any individual, company or "institute" that is commercially exploiting the Friedmann "cure." It would be delighted to have the opportunity. But it will never be given the chance as, in its opinion, the present suit is a mere bluff. If the exploiters of the tuberculous think that they can intimidate *The Journal of the American Medical Association* from warning the consumptives of the country against the present disgraceful commercialization of the Friedmann "cure," they are badly mistaken.

BOOK REVIEWS.

SURGERY OF THE EYE. A Hand-book for Students and Practitioners.—By Ervin Török, M. D., Surgeon to the New York Ophthalmic and Aural Institute; Ophthalmic Surgeon to Beth Israel Hospital; Consulting Ophthalmologist to the Tarrytown Hospital, and Gerald H. Grout, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Instructor in the Eye Department, Vanderbilt Clinic; Consulting Ophthalmologist to the Bellevue Hospital, First Division. Octavo, 507 pages, with 509 original illustrations, 101 in colors, and 2 colored plates. Cloth, \$4.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This is a treatise on operative surgery of the eye, although it discusses the diseases for the relief of which the operations are intended. It gives a careful discussion of operative methods, operating room, light, anesthesia, general preparations, dressings, etc., etc. It gives in detail the instruments to be used in each operation. It discusses post-operative complications and treatment as well as a detailed description of each step in the various operations.

The book is carefully written and profusely illustrated, it cannot fail to appeal to the medical student or to the graduate who intends to do surgery of the eye.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. For Students and Physicians. By John H. Musser, M. D., LL. D., late Professor of Clinical Medicine in the University of Pennsylvania; formerly President of the American Medical Association, etc. New (sixth) edition, revised by John H. Musser, Jr., B. S., M. D., Instructor in Medicine in the University of Pennsylvania; Assistant Physician to the Philadelphia Hospital; Physician to the Medical dispensary of the Presbyterian Hospital; Physician to the Medical Dispensary of the Hospital of the University of Pennsylvania. Octavo, 793 pages, with 196 engravings and 27 colored plates. Cloth, \$5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

It would be entirely superfluous to discuss in detail the various qualities of this book. It may be summed up by saying that it includes all the advance in the knowledge of disease and the methods of diagnosis. It is well written, clear in description, and fully illustrated. It is a book that easily takes first place as a work on medical diagnosis.

GENITO-URINARY DISEASES AND SYPHILIS.—By Edgar G. Ballenger, M. D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College; Editor Journal-Record of Medicine; Urologist to Westley Memorial Hospital; Genito-Urinary Surgeon to Davis-Fisher Sanatorium; Urologist to Hos-

pital for Nervous Diseases, etc., Atlanta, Ga., assisted by Omar F. Elder, M. D. The Wassermann Reaction by Edgar Paullin, M. D. Second Edition Revised. 527 pages with 109 illustrations and 5 colored plates. Price, \$5.00 net. E. W. Allen & Co., Atlanta, Ga.

The advancement in the knowledge of genito-urinary diseases and especially of syphilis, makes the revision of works on these subjects imperative at short intervals. The treatment of gonorrhoea and syphilis has been so absolutely changed within the past few years that new editions or new books are essential. The second edition of this work gives the most recent ideas in the treatment of these diseases and is a book especially adapted to the needs of the practitioner as well as the student. It is clear, concise and to the point.

THE PRACTITIONER'S VISITING LIST for 1914. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

The Practitioner's Visiting List has been before the medical profession so long and is too well and favorably known to need any introduction. Besides being a most convenient account book for the physician it contains much valuable information for ready reference.

STAMMERING AND COGNATE DEFECTS OF SPEECH.—By C. S. Bluemel. 2 volumes. Volume I, The Psychology of Stammering. Volume II, The Contemporaneous Systems of Treating Stammering; Their Possibilities and Limitations. G. E. Stechert & Company, London-Leipzig-Paris. Price, \$5.00 net.

These volumes give a careful study and analysis of the causes of stammering. The psychology of stammering is carefully studied through all its different phases, and logical deductions are made. The various methods which have been used in treating stammering are discussed and the author's opinion given as to their value. The book is the result of a vast amount of careful, scientific investigation and should be the means of accomplishing much in relief of this very annoying condition.

LICHEN PLANUS.

R. L. SUTTON, Kansas City, Mo. (*Journal A. M. A.*, January 17), describes certain variant forms of lichen planus which might escape recognition by the practitioner. He also includes in his consideration certain conditions heretofore included in the lichen group, but which have little clinical and no histologic resemblance to the typical form. Probably the most frequent of the aberrant types are those with circular patches of closely grouped more or less typical papules. Much rarer are the annular forms from gradual extension from single large papules. Two cases of the latter and one of an incomplete form of the same are reported. A form rather common in England but rare elsewhere is the linear type, the lichen planus striatus of Crocker, in which a narrow fillet of the eruption often follows the course of the sciatic nerve. A recently observed case of this is also described. Sutton thinks the most plausible explanation of this type is that it is due to scratching or other linear injury of the skin and not to nervous disturbance. The vesicular and bullous types of the disease are rare, but two cases are here reported by Sutton, as is also a case of a type followed by atrophy. Other atypical types illustrated by cases are the warty type, lichen planus hypertrophicus, lichen chronicus simplex (Vidal), which Sutton agrees with Brocq and Jacquet is a circumscribed pruritus with subsequent lichenification. It is one of the conditions mentioned as not being one of true lichen planus. The name prurigo nodularis has been given as a name for this condition and will probably be generally adopted. A case of lichen ruber moniliformis is also reported, which Sutton thinks is not allied to lichen planus but to prurigo nodularis. In the treatment, besides the regular hygienic and nutritional measures, Sutton has found mercury, as originally recommended by Liveing, greatly superior to arsenic. It is best given intramuscularly in the gluteal region and the soluble form rather than the insoluble form is preferred. In the hypertrophic form it may be alternated about once in two weeks with arsenic, or, better, with arsenic and iron. Alkaline diuretics are often beneficial, but he has found salicylates worse than useless on account of the gastric irritation. Cooling antipruritic ointments which are also more or less curative, and a soothing, non-greasy application which the patient may use at will, are advisable and prescriptions are given. For removing thick, scaly patches, the Roentgen ray and carbon dioxide snow are useful. For exceedingly troublesome itching, Sutton recommends a formula, for which he is indebted to Dr. Kanoky, of menthol, thymol, chloral and chloroform with the oils of eucalyptus and wintergreen in alcohol, applied three times daily. It is, he says, as hot as it is efficient, but he has found it useful in many cases of very troublesome itching. No efficient treatment for prurigo nodularis has yet been found, but Sutton thinks repeated freezing with carbon dioxide snow is probably the best plan. The article is fully illustrated.

TREATMENT OF TABES AND PARESIS.

W. H. HOUGH, Washington, D. C. (*Journal A. M. A.*, January 17), after remarking on the importance of early diagnosis of nervous syphilis and the difficulties

which it presents, says that authorities are now well agreed that it is best met by the mercury-salvarsan treatment as with syphilis in general. In the later manifestations, however, such as paresis and tabes, which have been shown to be active syphilitic conditions, treatment has not been so generally successful. Salvarsan seems to have a greater predilection for most of the other tissues of the body than it has for nerve-tissue, which may explain some of the non-success. It has been shown that the blood-serum of recently treated or cured syphilitics has a marked trophic action on the specific spirochete and the following technic has been devised by Swift and Ellis for bringing an effective medical agent into immediate contact with the diseased process without incurring the danger of direct injection of salvarsan into the subarachnoid space. "A dose (generally the maximum) of salvarsan or neosalvarsan is given intravenously in the usual manner. At the end of an hour from 50 to 60 c. c. of the patient's blood are drawn by means of venous puncture, clear serum is separated, diluted to 40 per cent., with normal salt solution, heated to 56 C. (133.8 F.) for half an hour, kept cool until the following day, then warmed to body temperature and injected into the subarachnoid space by means of lumbar puncture after the withdrawal of about 15 c. c. of spinal fluid, the amount of diluted serum injected being 30 c. c. (After the first few injections, if well tolerated, I usually inject 40 c. c. of a 50 per cent. serum). It must be injected slowly without much pressure. After the injection the patient is kept in bed for about twenty-four hours with head lowered." The number of treatments varies with the case, but the general rule is to give eight or ten treatments, one every second week, and then discontinue them for a while, repeating, if necessary, and using as indices the Wassermann test, with the blood and spinal fluid and the cell and protein estimations of the latter. Thus far the treatment has been tried by but few. Hough gives a brief summary of the cases in which he has himself tried it in tabes. Others have obtained about the same results in this disease. In paresis improvement has been noted by many in the treatment, especially by Cotton, Myerson and Asper. The problem here is more difficult than with tabes and early treatment is important. His own experience includes six cases, of which four are reported, one at some length. In all four there was pronounced improvement in the four reactions, which is more than he has observed in other methods. If we are able to arrest the progress in paresis and tabes by this method, it is the most marked advance that has yet been made in the treatment of these hitherto incurable conditions. The general opinion of those who have tried the method is that it is the most promising one for tabes and paresis that has yet been devised. The article is illustrated by charts.

AUTOSEROSALVARSAN TREATMENT OF SYPHILIS.

G. W. McCASKEY, Fort Wayne, Ind. (*Journal A. M. A.*, January 17), calls attention to the fact that discovery of the syphilitic origin of tabes and general paralysis has served to clear up the pathology of these diseases and that one factor of their intractability to antisiphilitic treatment is probably the inaccessibility of the subarachnoid lymph-space. He notes that salvarsan introduced intravenously does not enter the cerebrospinal fluid, as shown by positive Wassermann in spinal fluid while the blood-test

is negative. He gives the technic of intraspinal injection of autosalvarsanized blood-serum which was introduced by Swift and Ellis of the Rockefeller Institute and reports on the results of this method of auto-serotherapy as used by him in seven cases. He says that in twenty treatments administered over a period of three months he has seen remarkable improvement in some cases and he believes that the method in careful hands, when properly used, is devoid of danger and offers a new and rational treatment in cases of cerebrospinal syphilis.

ROENTGEN-RAY BURNS.

G. E. PFAHLER, Philadelphia (*Journal A. M. A.*, January 17), claims that we have learned how to avoid Roentgen-ray burns, which were so numerous in the early years of this agent. Today we rarely hear of their occurrence and the belief is gaining ground in the profession that they can be used with safety by any one. This is true only so far as the ray is used by those who know the dangers and how to avoid them. There is danger, he thinks, that the combination of enthusiasm and a false sense of safety may lead to bad results when the rays are used by untrained and unskilled physicians. It is a fact, he says, that as used today, they are far more dangerous than they were ten years ago, because they are ten times more powerful and the modern apparatus is capable of a much larger output in a given time. Ten years ago 1 to 5 millamperes were used in examinations, while today 10 to 100 are employed. The effect of the Roentgen ray on the tissues depends on the quantity absorbed and the degree of sensibility. Those that have passed through have practically no effect. To avoid bad effects one must be able to judge what penetration is needed. In roentgenoscopy it is not necessary to use a great amount of current and the time and quantity should be kept at the minimum. To avoid burns one must keep in mind, he says, the principles governing the cause of the burns and he gives the following directions: "1. To use as small a quantity of rays as is consistent with the examination. 2. To use a quality of rays that will penetrate the tissues and not be entirely absorbed by the soft tissues. One can learn to judge the penetration by frequent use of the penetrometer and by the making of many roentgenograms. 3. To make every examination as short as possible, thereby lessening the total amount of rays to be absorbed. 4. To use the intensifying screens when practicable. 5. To use filters for the elimination of the softer rays. 6. To confine the rays to the part actually under examination. Burns of the operator may be avoided: (1) by keeping entirely out of the field of the rays, by working from an adjoining room with lead-lined walls between, or by the use of lead-lined cabinets; (2) by confining the rays to the tube, so that the only way of exit is through the aperture made for the examination of the patient; (3) by means of protecting shields, aprons, gloves, masks, etc. In fact, all these should be combined. Burns during Roentgen therapy may be avoided: (1) by following the same general principles referred to in diagnosis; (2) by measuring each dose given and never exceeding the limit of skin toleration as indicated by the dose meter; (3) by allowing an interval of three weeks between the repetition of the dose on any particular area of skin; (4) by use of more filtration than would be used in diagnostic work; (5) by keeping in mind the fact

that epithelium and glandular tissue are more sensitive than other tissue to the rays; (6) by avoiding any other form of irritation on the skin treated, such as counterirritation, high-frequency currents, liniments, stimulating ointments, antiseptics, etc." Details in following these principles may vary with the individual and his circumstances, but they deserve careful attention. Roentgenology is, Pfahler believes, more properly a specialty than others. The user of it must be a good physician and pathologist, have a large equipment, must master the details and always be cautious.

THE ITINERANT QUACK.

The man who comes to the small town with a cheap stock of shoddy clothes, rents a store for a few days or weeks, and by means of flamboyant advertising disposes of his worthless goods to the "suckers" of the locality is looked on by reputable business men as a detriment to the community. Decent men of the town recognize that while the owner of the store rented and the proprietor of the local newspaper may make a little money out of the visit of the fly-by-night merchant, the town as a whole is the worse for the visit. So generally is this admitted that most towns and villages impose a heavy tax on undesirable citizens of this type.

The itinerant quack bears the same relation to the community as the transient clothing-store proprietor, with this difference: while in the one case the unsophisticated are relieved of their money without getting value received, in the other they also run the risk of losing their health as well. The business men of country towns, however, do not so easily recognize the harm that the traveling doctor does as the damage that the traveling merchant causes. One reason for this is, of course, the fact that the traveling quack is not a competitor of the local business man. Should the local physicians protest, their objections are discounted on the ground that it is a case of "professional jealousy." Rural towns, however, are gradually waking up to the fact that the visit of the itinerant doctor is just as much a calamity as the visit of the itinerant merchant. And, naturally enough, the editors of the country newspapers are among the first to call public attention to this fact. We say naturally, says *The Journal of the American Medical Association*, because the men editing the country newspapers are, as a class, among the leaders of thought in their communities. From a selfish point of view, the local newspapers might be ex-

pected to be the last ones to have anything detrimental to say about the class that brings in a handsome advertising revenue.

The *New Teller* is published at York, Neb. It received an offer of an advertisement from a Dr. A. A. Potterf of Kansas City, who was going to pay a visit to York in the hope, doubtless, of catching some persons who think that their home physicians know less than traveling quacks. Of course the editor did not know that Dr. A. A. Potterf was a graduate of a low-grade school that is now out of existence; that while the doctor has been practicing medicine for a quarter of a century he is so little known in his home town that reputable physicians of Kansas City have never heard of him. The editor of the *New Teller* did not know, and could not be expected to know, these things; but he did know that physicians who are above the average in knowledge and skill do not go quacking it around the country. Knowing this, *New Teller* published the following open letter on the front page of its issue of July 30. It is worth reading:

"Dear Doctor:—Your ad. copy and express money order received. We regret very much that you contemplate another visit to York in the near future. We regret just as much not being able to keep the money order—it looks good to us. However, the *New Teller* has managed to struggle along several months without any such advertisements. We are mercenary enough to indulge in the hope that you will file your certificate with the county clerk, and pay the small fee required by the law, though this little matter is as a rule neglected by the traveling fraternity of your calling.

"Owing you no personal enmity, we can't help expressing the wish that the city of York might find some way to benefit by your stay in this city to the extent of at least fifty dollars a day. Not so long ago, an itinerant pedler might rent a store-room in York, put in a cheap stock of overalls, gilt watches, and in the course of ten days wind up with an auction sale. This proceeding would now cost him too much.

"You may be a good doctor—a most excellent doctor. As such you might build up a lucrative practice in Kansas City and be saved the toils and hardships incident to constant traveling. [A delightful piece of gentle sarcasm.—Ed.] There are already many good doctors in York—plenty, in fact. As they make their homes here, the people have a fair chance to judge them. The peo-

ple don't have a fair opportunity to become acquainted with you. We believe this community would be as well off without the visits of 'United Doctors,' 'Doctor Specialists,' and the like, and have said so in a variety of ways. We believe the person with defective eyesight should consult an oculist, rather than patronize a spectacle pedler. If pedlers we must have, let them aid materially in cutting down the heavy burden of the taxpayers.

Very respectfully,

THE NEW TELLER."

"The above letter also applies to 'The Old Reliable State Medical Institute' of Omaha, which forwards ad. copy under date of July 29, announcing a three days' visit to York. The Institute may be old and it may be reliable. It may be several other things. It should be remembered that a quack doctor is more dangerous and vastly more expensive than patent medicines. The public is now protected to a certain extent against the latter."

Could the facts be stated more simply or more accurately? A letter like this makes the readers of the newspaper think, and quackery cannot thrive among people who think! Some day it will dawn on the public generally that the doctor who can treat any kind of ailment a little better than the general run of doctors does not need to spend money advertising that fact, nor is it necessary for him to assume "the toils and hardships incident to constant traveling!"

LEGISLATION ON MERCURIC CHLORIDE TABLETS.

There are now three bills before Congress intended to regulate the sale of mercuric chloride tablets. One of these requires that the tablets shall be green in color and cubical in shape. The latest bill introduced is that proposed by Senator Gallinger, of New Hampshire, who is a physician. This bill requires that all tablets of mercuric chloride shall be flat, triangular, or three cornered in shape, colored blue, and dispensed only in blue or amber colored corrugated bottles, conspicuously labelled "Poison" in red letters. An ordinance prohibiting the sale of these tablets has been proposed by the Board of Aldermen of Baltimore. The matter is under consideration by Health Commissioner Lederle, of New York, who has received various suggestions, but has not yet decided what action he will take.

BEFORE a single dose of Phylacogen was offered for sale, this product was searchingly investigated for fourteen months; clinical studies were conducted by competent and disinterested physicians; rigid tests were made in our laboratories by skilled workers. Previously Dr. Schafer and his colleagues had conducted similar laboratory and clinical investigations.

Today, twenty-four months after the first Phylacogen was placed upon the market, the rapidly accumulating clinical evidence in support of Phylacogen therapy comprises more than seven thousand case histories actually reported to us and now in our files.

These show 83 per cent. of recoveries.

This evidence comes from every part of the United States and from Canada, Mexico, Cuba, Ecuador, Argentina, Peru, South Africa, England, Scotland, Belgium, Japan, India, Bermuda, Australia, New Zealand, Hawaii and U. S. of Colombia.

Sixty-two interesting and instructive papers on the use of Phylacogen have been printed in thirty-six American medical journals and twenty-eight similar papers in six foreign medical journals, as: "Western Canada Medical Journal," "London Lancet," "L'Union Medicale du Canada," "Australasian Medical Gazette," "Revista Medica Cubana" and "Repertorio de Medicina y Cirugia."

This constitutes a record unmatched, we believe, by any other therapeutic agent in the same length of time.

Phylacogen literature will be sent to physicians desiring it.

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THERAPEUTIC NOTES.

THE CONSTANT NEED FOR AN EFFECTIVE TONIC.—It is a fact not generally recognized, but very true nevertheless, that the class of remedies most frequently used by the practitioner is that made up of the tonics or reconstructives. This is not so surprising, however, when we stop to consider that the great bulk of ailments which lead people to consult their physician, have their origin in some depression, derangement or "falling off" in bodily vitality. Naturally, in instituting treatment for such afflictions, the practitioner seeks to stimulate faltering functions, increase the activity of weakened organs and restore all the energy he can to the whole organism. To do all this and produce permanent, not temporary results, requires a remedy that possesses beyond all question tonic and reconstructive properties.

Among those that have been found especially capable of up-building the body and accomplishing changes permanent in character, Gray's Glycerine Tonic Comp. has long stood first. The reason for this popularity is found at once in the remarkable efficiency of this product, for when properly administered it is a dependable means of effecting prompt and substantial results in atonic indigestion, gastro-intestinal catarrh, chronic bronchitis, incipient tuberculosis, neurasthenia, nervous disorders in general, and wherever an efficient restorative and reconstructive is needed. For over 16 years "Gray's" has been at the command of the profession, and countless physicians derive genuine satisfaction from its use because they have found it one of the few remedies that measures up to all that the word tonic means in modern therapeutics.

A SEDATIVE OF DISTINCTIVE VALUE.—The particular points about Passadyne (Daniel) that gives it a distinctive value as a sedative and calming agent are its freedom from immediate evil effects and also the possibility of addiction.

In therapeutic potency Passadyne (Daniel) is easily the equal of other agents of its class, a fact that has been practically demonstrated by hundreds of clinicians. For the production of sleep, and to soothe a highly excited nervous organism Passadyne (Daniel) will be found to possess a distinctive value. A sample may be had by addressing the Laboratory of John B. Daniel, Atlanta, Ga.

THE PHYLACOGEN TREATMENT OF INFECTIONS.—An interesting experience with Phylacogens has been narrated by Dr. E. H. Troy, of Oklahoma. It appeared in a recent number of the *International Journal of Surgery*.

"I have treated twenty-four cases of rheumatism," writes Dr. Troy. "Their recoveries were as rapid as remarkable. One man of thirty-two had had rheumatism for three years; he was confined to bed for three months, and eight months elapsed before he was able to work. He was brought to the hospital on a bed and had to be lifted on a sheet. I gave him one dose of Phylacogen daily, and in six days he walked to the station, carrying his suit-case. Another patient, a man twenty-four years old, had inflammatory rheumatism when ten years of age. He was confined to the bed for six months. He has suffered all his life, and had visited the various watering-places in America, receiving very little

benefit. The last four years he has been almost incapacitated. I gave him ten doses of Phylacogen, and his recovery was rapid."

Dr. Troy refers to a number of other cases of infection, including chronic otitis media, sycosis, acne, carbuncle and erysipelas, in the treatment of which he has been singularly successful, and adds:

"The administration of Phylacogen is peculiarly adapted for the treatment of infectious diseases . . . The only requirement is to make a diagnosis. If you are treating infectious diseases without making a diagnosis, however, do not be disappointed if you do not get results with the Phylacogens."

CHRONIC GLANDULAR ENLARGEMENT.—For many years Iodia (Battle) has been a favorite agent in chronic glandular enlargement, owing to the distinct alterative influence it is capable of exerting. In such conditions there is a clear indication for iodine, and this is furnished the tissues through the administration of Iodia (Battle). The therapeutic value of the drug is augmented by the active principles of such well known vegetable alteratives as stillingia, helonias, saxifraga and menispermum.

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THE NEURASTHENIC INVALID.—Like the poor, the neurasthenic is "always with us," and while the stress and strain of modern life and living continue, the physician will be called upon to treat the more or less chronic invalid who exhibits all sorts of bizarre symptoms, in endless and kaleidoscopic variety. It is, of course, an easy matter to advise the physician to search out and remedy the operative cause of the disorder, but it is not always as easy to do this, especially when no organic changes are discoverable. While purely symptomatic treatment may be unscientific, it is usually essential, in order to gain and retain the confidence of the patient. There is, however, one pathologic finding in a large majority of cases, and that is anemia of greater or lesser degree. In some instances this may be found to be the essential cause of the neurotic symptoms. In any event, this condition should be corrected, and for such purpose there is no better remedy than Pepto-Mangan (Gude). When a hematinic is indicated for a nervous, cranky man, or a finicky, more or less hysterical woman, Pepto-Mangan is peculiarly serviceable, as the patient cannot consistently object to the taste, which is agreeable to every one. The digestion is not interfered with in the least, constipation is not induced, and the blood-constructing effect of the remedy is prompt and certain. It is always worthy of trial not only in anemia of the neurasthenic invalid, but also in all conditions of blood and tissue divitalization.

THE PNEUMONIA CONVALESCENT.—While the course and progress of acute lobar pneumonia is short, sharp and decisive, the impression made upon the general vitality is often profound, and apparently out of proportion to the duration of the disease. Even the robust, sthenic patient is likely to emerge from the defervescent period with an embarrassed heart and general prostration. In such cases the convalescent should be closely watched and the heart and general vitality should be strengthened and supported, and this is especially true as applied to the patient who was more or less devitalized before the invasion of the disease. For the purpose indicated, strychnia is a veritable prop upon which the embarrassed heart and circulation can lean for strength and support. As a general revitalizing agent is also needed at this time, it is an excellent plan to order Pepto-Mangan (Gude), to which should be added the appropriate dose of strychnia, according to age, condition and indications. As a general tonic and bracer to the circulation, nervous system and the organism generally, this combination cannot be surpassed.

THE TUBERCULOUS INVALID.—The pricking of the Friedmann bubble but served to still further confirm and accentuate the vital importance of the well defined methods of treatment for tuberculosis, that have given such encouraging results, i. e., fresh air, sunshine, rest, nutritive reinforcement and judicious medication. A proper combination of these four remedial factors is practically certain to place the incipient tuberculous invalid upon the road to recovery, if the patient is intelligently handled and the treatment persisted in. While it is, of course, acknowledged that the first three non-medicinal agents referred to constitute the vital elements of the up-building regime, considerable aid is afforded by judicious medication. Hematinic reinforcement should certainly not be neglected, in view of the secondary anemia which is almost always apparent. Among the agents which have produced the best results in the revitalization of the blood, Pepto-Mangan (Gude) is the most generally eligible and acceptable. As it is thoroughly palatable, neutral in reaction, free from irritant properties and devoid of constipating effect, the digestion of the patient is not disturbed, while the appetite and general vital tone improve more rapidly and satisfactorily than when hygienic and nutritive measures are depended upon exclusively.

CLINICAL REPORTS.—We can furnish physicians who are interested, reports dealing with each disease in which Anedemin is indicated, but physicians who will give Anedemin a test will be thoroughly convinced of its value. The following report written by Dr. C. W. Canan, will be interesting to physicians since it deals largely with a condition which is frequent with all physicians and many are skeptical regarding the administration of Anedemin during pregnancy fearing more or less serious results. We have many reports which are conclusive evidence that Anedemin will be perfectly safe administered during pregnancy and when indicated has proven very valuable as well as essential. We wish to state that this report is published by authority of Dr. Canan, and reports we receive from physicians are strictly confidential unless the publication is desired.



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Clinical Report.—Patient, Female, Married, weight in health 135 pounds, age 38, mother of three children, youngest 7, six months gone in her fourth pregnancy, when she found herself out of breath on the slightest exertion. Kidneys very sluggish, lower limbs swollen; these symptoms gradually increased until the 7th month when the writer was called. Heart rapid and weak, 120 per minute; urine very scanty and loaded with albumen; skin dry and sallow in color; respiration 26 when quiet and increased on exertion; legs and feet distended what the skin would hold; face and hands almost as bad; in fact there was a general Anasarca, and the case looked hopeless with two months yet before time for labor. We decided to give Anedemin a trial and prescribed two tablets every three hours with a brisk dose of sulphate magnesium every morning. The magnesium was taken only for three mornings when it was discontinued because the tablets acted very powerfully on the bowels. Such quantity of water that was gotten rid of in a few days can scarcely be imagined. One would hardly think she was the same woman. The purging was so severe that we had to temporarily sustain her with brandy. In three days the pulse had dropped to 90 and in three more to 70 and respiration was normal. The kidneys were slow to improve while the quantity of water was slightly increased; it was several days before she was voiding a normal quantity, the albumen decreased as the quantity increased, but did not entirely disappear until the birth of her baby. After first week the dose was reduced to one tablet every three hours and finally one three times a day which was continued up to the birth of her baby. She made a splendid recovery.

(Signed),

C. W. CANAN, M. D., B. S., Ph. D.
Orkney Springs, Va.

The experience of Dr. Converse.

I feel it is a pleasure to recommend Anedemin tablets in all cases of dropsical affections, whether it be caused by heart or kidneys. I have recently treated a case that was badly bloated from waist to feet, impossible to breathe when lying down, his neighbors all felt that he would die. I used Anedemin according to directions and it reduced the dropsical appearance to nearly normal condition in five days and the patient is now quite comfortable. Anedemin is worthy of great credit.

(Signed),

W. H. CONVERSE, M. D.,
Eastford, Conn.

January 17th, 1913.

SEROBACTERINS OR SENSITIZED BACTERIAL VACCINES.—A distinct advance in bacterial therapy. Bacterin or vaccine therapy, carried out by the use of killed bacteria, has now been successfully applied to the prevention and treatment of many infectious diseases. Clinical experience has proven beyond question that these products produce a degree of immunity which enables the person treated to resist infection and which is of great value therapeutically. The length of time required before the immune condition is present and the local and general reactions which sometimes follow the first and occasionally subsequent doses are, however, factors calling for improvement.

To remedy the first of these defects, experiments were made with mixtures of serum and killed

bacteria, with the idea that by this means immediate passive immunity could be had, as well as a more permanent active immunity, but this procedure resulted in failure, as only a slight degree of passive immunity was secured and no active immunity whatever. Besredka attributed this failure to the excess of serum present in such mixtures, and for the preparation of his "sensitized vaccine" took advantage of the discovery of Ehrlich and Morgenroth that bacteria mixed with a serum containing specific antibodies unite permanently with such antibodies. After maceration in the immune serum for a sufficient time the sensitized bacteria are recovered by centrifugalization. The bacteria, with their antibodies attached are then washed in the centrifuge with physiological saline solution until all traces of serum are removed. Careful complement fixation and animal tests are employed to make sure that proper sensitization has taken place, and finally the bacteria are made up into standardized suspensions for administration. Since the value of serobacterins depends on thorough sensitization, and the complement fixation test proves the extent to which this has taken place, this test constitutes a vital part of the technic.

Besredka claims that sensitized bacterial vaccines or "serobacterins" possess a great advantage over the bacterial vaccines now in common use, in that their action is far more rapid, and they produce no clinical or opsonic negative phase, and no local or general reactions. His researches have been confirmed by such prominent investigators as Marie, Remlinger, Dopter, Theobald Smith, Metchnikoff, Gordon and others, all of whom found that sensitization of bacteria confers upon them new properties which render them highly effective as vaccines, free from the defects of the ordinary bacterial vaccine and "possessing an action which is *certain, inoffensive, rapid and lasting.*"

A large number of favorable reports have appeared on the value of serobacterins in the preventive and curative treatment of such diseases as cholera, plague, typhoid fever, dysentery, streptococcal and pneumococcal infections, gonorrhoea and even tuberculosis and rabies. Sensitized plague vaccine is now official in the French Pharmacopœia, sensitized tuberculin is coming into very general use in Germany and other European countries, and sensitized rabies vaccine, on account of the rapidity and greater certainty of its action, has been adopted as the official Pasteur treatment.

The underlying principle explaining the action of serobacterins, according to Besredka, is that the bacteria prepared by sensitization are rapidly devoured by the phagocytes, and this is the cause of the absence of unfavorable reactions following their use. The combining of antibodies and bacteria outside the body disposes of a long-drawn-out preliminary process which, with the bacterial vaccines, must be done by the patient's body cells. In serobacterins, this combination of antibodies with the bacteria being already preformed, their action is immediate and free from local and general reactions.

The action of serobacterins may be characterized as follows:

1. *Certain*—because the bacteria are already prepared for phagocytosis and intra-cellular digestion.
2. *Rapid*—an effective immunifying response follows the first injection in from 24 to 48 hours.
3. *Harmless*—Being saturated with antibodies, the serobacterins do not absorb any of those present in

the blood of the patient, and consequently cause no opsonic or clinical negative phase. They are free from toxic action.

4. *Permanent*—Animal experiments prove that the immunity secured from the use of serobacterins or sensitized bacterial vaccines is more permanent than that following the use of bacterial vaccines.

The rapid production of active immunity marking the action of the serobacterins is invaluable in both the treatment of disease and preventive immunization. In treatment of a patient infected with rapidly multiplying pathogenic bacteria, the prompt immunizing response should overcome the infection before it causes serious damage. In preventive immunization, especially in epidemics, the advantage of securing immediate immunity should make the use of serobacterins almost obligatory.

Sensitization is a delicate and complicated procedure which can be successfully carried out only in especially equipped laboratories by experts of the highest type. The difficulties surrounding the preparation of sensitized vaccines have up to the present time prohibited their general use, and the production of this superior vaccine on a scale that will make its use possible in every-day practice marks an important step in bacterial therapy.

A very complete review of this most interesting subject appears in *The Mulford Digest* for December, and we suggest that any physician who has not received a copy of the December Digest containing this review should secure one.

THE VACCINE TREATMENT OF TYPHOID FEVER.

W. H. Watters, of Boston, reports the results of six years of experience with vaccine treatment of typhoid fever. The best results have been attained by preparing the vaccine from an old non-virulent culture that has been subcultured for years in connection with the Widal tests. A new culture is made from this and incubated for twelve hours. A fresh culture taken directly from a patient and used for several months had apparently no effect. An early diagnosis of the disease is most important. This can often be first made by blood culture, days before the Widal reaction appears. It is probable that every day gained in diagnosis, and hence in inception of the treatment, means several days gained in the duration of fever and appearance of convalescence. The vaccines when properly used by an immunizator will do no harm in any stage of the disease or in a relapse. The earlier they are used, however, the greater may be the hopes of benefit therefrom. The more severe the case the smaller should be the dose. Amounts as small as one or two million have seemed to transform some most critical cases into convalescents. The interval between doses is variable, averaging from two to four days. A dose or two administered after the temperature has reached normal will render relapses less frequent.

—*Medical Record*, September 20, 1913.



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CONTROL OF CANCER.

Some cases of cancer can be cured. The number of such cases can be increased by earlier diagnosis and better surgery. This is the only hope that our present knowledge justifies, but this fact should be known to the public. In the last issue of *The Journal of the American Medical Association*, Dr. Joseph C. Bloodgood of Johns Hopkins Hospital, Baltimore, declares that cancer can be cured in nearly one-half of all cases if taken early enough. The American Society for the Control of Cancer, recently organized, says Dr. Bloodgood, hopes to bring before the public and the profession the actual percentage of cures of cancer accomplished in the various clinics in this country.

Many physicians to-day are skeptical as to the permanency of the cure of cancer. The majority of people believe that cancer is a "blood disease." By this they express a vague notion of a general disease present in many parts of the body, and for this reason they naturally conclude that its removal from one place will have no effect on the disease in other parts. Surgeons do not always tell their patients the nature of their disease, but whether they do or not, the longer the patient lives in comfort the more skeptical does he or she become as to the grave nature of the original disease. Especially is this true in cases in which the operation was necessarily mutilating. The doctor is then asked: Was it necessary to do so much? Was the disease really cancer? In the control of cancer, therefore, Dr. Bloodgood argues, we shall have to combat this skepticism both in the ranks of the profession and among the people. Cancer can be cured and we must bring it before the profession and the public in such a way that they will believe it. The percentage of cures in the fully developed cancer is relatively small. In the very early cases it is nearly one-half.

After discussing the different forms of cancer, the symptoms and relative chance of recovery if operated on early, Dr. Bloodgood says that the control of cancer is a matter of education. The chief object of the American Society for the Control of Cancer is to hurry on this education, so that more lives may be saved to-day. In its very early stages, cancer is an "economical disease," at least relatively. The expense of treatment is little, either to the hospital or to patient, and the period of disability is short. De-

lay simply means more expense, more danger, greater discomfort and decreasing probability of a cure.

 WHAT MAKES PEOPLE BLIND.

Did you ever stop to think of the one hundred thousand blind people in the United States, and what caused their misfortune? Did it ever occur to you that about thirty thousand of these unfortunates are unnecessarily blind? Do you know that about twelve thousand of these are children who are blind because of the unfaithfulness of either the father or the mother? Are you aware that twelve thousand people are groping their way about in darkness due to injuries which in most instances could have been avoided by the installation in factories of proper safety devices? Twenty-five hundred of them are deprived from a livelihood because of granular lids, which is preventable by the application of proper remedies. Two thousand are deprived of their sight because of Fourth of July accidents. Fifteen hundred will never again see the light of day because of various causes, such as the drinking or absorbing of wood alcohol and the neglect of proper treatment of certain eye affections. If we look at these figures calmly, they are amazing. We can hardly believe that thirty thousand human beings are shut out from earning a livelihood, who might now be employed, self-supporting and productive of several million dollars' worth of labor, if preventive measures had been employed in their cases. We are a long-suffering people, but how much longer must we keep our eyes closed to the fact that if the doctor or midwife had dropped a 1 per cent. solution of nitrate of silver into the eyes of the new-born babe, six thousand pairs of eyes would have been saved from the dreadful effects of gonorrhoeal ophthalmia. If the twelve thousand now sightless from injury had been employed in factories where safety devices were installed they would be producers instead of dependents. Granular lids or trachoma is amenable to treatment, yet twenty-five hundred persons were allowed to become blind from this cause. It must be a happy thought to all of us to know that the past two years has shown a marked diminution in the number of injuries from Fourth of July accidents. The use of wood alcohol, working in rooms where it is used or drinking "power-house whisky" or some of the various soft drinks containing wood alcohol, has caused a large number of persons to become totally blind. There will

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always be a certain number of cases of blindness, which cannot be avoided, but it is appalling to think that the sight of thirty thousand of those now blind could have been preserved. How shall we limit blindness in the future? By insisting that our children's eyes shall have proper care. By compelling our factories to install safety devices. By medical inspection of schools. The child sitting next to your child may have diphtheria and convey it to your child's eyes. By demanding a safe and sane Fourth of July in your own town. By abolishing the roller towel and by establishing such other hygienic measures as will tend to keep us healthy and free from disease.

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Burlington, Vermont.

ANOTHER CANCER CURE.

A few days ago some of the Denver newspapers contained full-page advertisements of a "cure for cancer." The public was told: "The International Skin and Cancer Institute of Denver claims to have the *only* reliable treatment for cancer in existence. It claims that the remedy it possesses is the *only* cure in the world." The exploiter of this, the latest of cruel frauds, is one John D. Alkire, who, so far as we can learn, has neither medical nor pharmaceutical knowledge. What the "cure" is supposed to be, we do not know, says *The Journal of the American Medical Association*; neither, for that matter, is it necessary to know. Certain it is that the thing is a fraud—a cruel fraud, a damnable fraud. It is no excuse to say that Alkire is honestly convinced that the stuff he is selling is a cure for cancer. His conviction merely makes him that much more dangerous and gives him greater potentialities for harm. From its method of exploitation it is impossible to absolve Alkire from the suspicion, at least, that he is not acting in good faith. He claims to have lost both his father and his mother from cancer. If, therefore, he was absolutely convinced that he had the only cure known for this fearful scourge, it is hardly conceivable that he would monopolize the secret of it for the dollars to be made in exploiting it. Alkire and those associated with him will doubtless make money. Those afflicted with cancer, and those who believe themselves to be afflicted with cancer, will flock to Denver for the cure. Of those who rely on Alkire, the actual victims of the disease will, of course, die, but there will be the usual proportion of recoveries from non-malignant sores that will be heralded as "cures." This is the history of every fraudulent "cancer cure." Among the first beneficiaries of Alkire's inhuman business are those Denver newspapers that sold their pages to give publicity to this lying message to the unfortunate sufferers from cancer. To the honor of Denver be it said, some of its newspapers refused to accept Alkire's advertisement.

[Note by the editor: After the above was in type a proof was sent to a Denver correspondent. Apparently, it was shown to some one connected with Alkire concern, for on December 15 *The Journal* received the following telegraphic day letter from Denver:

"We have learned of your proposed article to be published under title of Current Comment 'Another "Cancer Cure"' in which you make an unwarranted attack upon John D. Alkire and the International Skin and Cancer Institute Company. We wish to advise you that we consider this communication libelous, damaging and wholly unwarranted and that we will attempt to hold you responsible in damages if the communication is published and circulated in that form.—JOHN HORN CHILES, JOHN A. DEWEESE, Attorneys for John D. Alkire and the International Skin and Cancer Institute Company."

The Journal is not given to publishing matter for the purpose of injuring any one. Neither is it in the habit of being intimidated by threats of lawsuits. The comment on Alkire's "cancer cure" was written for one purpose only: that of attempting to offset in some small degree the publicity that had been given, through a portion of the Denver daily papers, to as cruel and inhuman a fraud as we know of—an alleged cure for cancer—and to warn the public from placing any faith in it. This being the purpose, *The Journal* is not to be turned from its course by threats of reprisal.]

The news, in a cablegram of November 2d to the Philadelphia *Ledger*, that Friedmann's remedy has been taken up by German capitalists, arouses fresh interest in what had seemed to be a closed incident. Friedmann himself, for the first time, announced through the columns of the *Berliner Klinische Wochenschrift*, the ingredients of his specific, which consists of "living non-poisonous turtle tuberculosis bacilli, which even in the largest doses are entirely harmless for either humans or warm-blooded animals." The serum will be sold in four strengths, to be injected in four different ways in the muscles and veins. Physicians are to be supplied with detailed instructions how to apply the serum, which, if properly used, is guaranteed to have no deleterious effects.

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FORMULA: { Cystogen gr. V.
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{ Sod. Tart. gr. XXV.

DOSE: One to three teaspoonfuls in a glass of water t. i. d.

(Effervescent tablet of Cystogen 3 grains and Lithium Tartrate 3 grains).

DOSE: Two or three tablets in a glass of water, three or four times daily.

are suggested as specially convenient forms in which to administer this drug.

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Cystogen-Aperient (Granular Effervescent Salt with Sodium Phosphate).

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CAMPAIGN AGAINST WOOD ALCOHOL.

The New York Committee for the Prevention of Blindness has begun a crusade against makers of bay rum and other toilet articles containing wood alcohol. Two manufacturers have been fined and four more face trial. Bay rum containing wood alcohol may cause blindness. Power-house whisky which contains wood alcohol may cause blindness or death. Soft drinks containing wood alcohol may cause a withering of the optic nerve and consequent blindness. Workers in large vats who are obliged to shellac the inside of them

become blind from inhaling the fumes of the wood alcohol contained in the shellac. The laws are stringent regarding the manufacture and sale of wood alcohol, but unless some one makes it his business to keep watch on the unscrupulous manufacturers they will introduce this vile poison because it is cheaper. See to it that your barber uses only the best toilet articles, and that the ginger ale you drink is one that does not contain this poison. You can detect the odor in most instances and this should put you on your guard.

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Vermont Medical Monthly

Official Organ of the Vermont State Medical Society.

Vol. XX, No. 3.

Burlington, Vt., March 15, 1914

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For a complete review of the literature on Serobacterins, see Mulford Digest for December.

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Laboratory of JOHN B. DANIEL, Atlanta, Ga.

THE LIFE EXTENSION INSTITUTE.

This organization, which has for its avowed object the lengthening of human life by the practical application of the principles of modern scientific hygiene, was incorporated in New York on December 29, 1913, with ex-President Taft as chairman of the board of directors and Colonel William C. Gorgas as consultant in sanitation and hygiene. Mr. E. E. Rittenhouse, of New York, will be president of the institute. Mr. Harold A. Ley, of Springfield, Mass., the originator of the plan, will be treasurer, and Mr. James D. Lenahan, secretary. Dr. Eugene Lyman Fisk, of New York, has been appointed medical director. A hygiene reference board has been appointed, which is composed of nearly one hundred men who are authorities on matters pertaining to health and hygiene. Professor Irving Fisher, of Yale University, is chairman of this board, and among its members are Dr. Lee K. Frankel, Dr. Burnside Foster, the Hon. Walter H. Page, United States Ambassador to England, Dr. Alexander Graham Bell, Dr. C. B. Davenport, of the Eugenics Record Office, Dr. George H. Simmons, of Chicago, Dr. William J. Mayo, of Rochester, Minn., Dr. William H. Welch, of Johns Hopkins University, Professor Russell H.

Chittenden, director of the Yale Sheffield Scientific School, President David Starr Jordan, of the Carnegie Peace Foundation, Miss Mabel Boardman, of the Red Cross Society, Dr. Wickliffe Rose, of the Rockefeller Hook Worm Commission, Dr. Harvey W. Wiley, of Washington, D. C., and Dr. William H. Tolman, of the American Museum of Safety. The institute plans to make arrangements with life insurance companies, schools, industrial establishments, clubs, and individuals as well as to cooperate with hygienic agencies and movements of all kinds, including those connected with the tuberculosis movement, the social hygiene movement, the eugenics movement, the public health departments, Federal, State and municipal, and even popular gymnastics and sports. It will establish laboratories in the larger cities for analysis of blood, urine, etc., of the persons examined. Its central office will be at 25 West Forty-fifth Street, New York.

Musk has been recommended in diabetes insipidus.

Sage tea with lemon juice is a simple remedy for night sweats.

The dry treatment of wounds, burns and ulcers seems to be gaining in favor.

GLYCO-HEROIN
(SMITH)

For
Coughs
Bronchitis
Phthisis
Whooping Cough
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Asthma

AN ABSOLUTELY STABLE
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THAT HAS GAINED
WORLD-WIDE DISTINCTION
THROUGH ITS DEPENDABLE
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DOSAGE:
The adult dose of
the preparation
is one teaspoonful,
repeated every two
hours or at longer
intervals, according
to the requirements of
the individual case.
For Children of ten or
more years, from one-quarter
to one-half teaspoonful.
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more years, from five to ten drops.

FOR SAMPLES AND LITERATURE, ADDRESS:
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SUICIDES IN 1913.

The record of suicides in 1913 shows an increase, the number being 13,106, compared with 12,981 in 1912, and 12,242 in 1911. The proportion of suicides between men and women remains about the same, being 9,602 males and 4,504 females. Physicians, as usual, head the list among professional men, the number being 34, compared with 40 in 1912, 27 in 1911, 51 in 1910, 27 in 1909, and 42 in 1908. A significant feature of the report is the increasing number of persons who take their lives on account of ill health, 1,068 suicides during the past year being attributed to that cause. Of the total number, 4,842 shot themselves, 4,392 took poison, 1,932 hanged themselves, 984 killed themselves with gas, 349 cut their throats, 325 drowned themselves, 168 threw themselves from roofs or windows, 54 threw themselves under railroad trains, 28 stabbed themselves, 20 burned themselves, 9 employed dynamite, 1 used electricity, 1 starved, and 1 set a new agency at work by using an automobile as means of destruction. There were 213 cases of murder and suicide during the year. —*Exchange.*

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- 1 Cystoscope (for female bladder).
- 3 Urethrascopes Batteries and fixtures complete in cases.

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VERMONT MEDICAL MONTHLY

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means a diminution of the number of the fundamental red corpuscles; a reduced percentage of oxygen-carrying hemoglobin, and as a consequence, a diminished resisting power against more serious disease.

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NEW YORK, U.S.A.

Our Bacteriological Wall Chart or our Differential Diagnostic Chart will be sent to any Physician upon application.

THE HEALTH TRAIN AS A STIMULUS TO
SANITATION.

The value of the health train, now being employed in some states to educate the people on the value of better hygiene and sanitation, is undoubted. It gives direct instruction in personal and community hygienic principles, and the printed reports of the inspectors accompanying the train concerning the towns and villages through which the train passes have become a strong stimulus to sanitary improvement. This is accomplished both through appeals to local pride and through light thrown on specific defects. The State Board of Health of Michigan during the summer ran a health train through the state, touching at many points. Great interest was manifested in the lectures and the exhibits connected with the train. In the report of the inspectors, the sanitary shortcomings of many villages are set forth in plain terms. For instance, of one town it is said: "Health sentiment is at a low ebb here. The health officer was attending a picnic, but the flies were attending to business in the unscreened, filthy privies and garbage-heaps around the town." This particular

town is not likely to be proud of this report, and the health officer will undoubtedly begin to clean things up. In contrast to this it was said about another town: "This is the most all-round sanitary little village visited by the special. A good progressive president and health officer, backed by a splendid sanitary sentiment." In many places it was found that the health department was active and efficient, but was not supported by the proper public sentiment. This is the chief shortcoming of most places, on the part both of the citizens and of the city or town authorities who fail to vote sufficient money to carry out sanitary measures effectively. While there was no intention of being hypercritical, the truth was plainly told in the report, and without doubt the awakening secured by the health train and the report on sanitary conditions will work a great improvement. Michigan, of course, is not different in this regard from other states, and the report on conditions there would probably apply almost exactly to any state making a similar inspection. The method of teaching personal and public hygiene by the health train, says *The Journal of the American Medical Association*, is a modern invention that should be encouraged.

AFTER THE ACUTE DISEASES

such as typhoid fever, pneumonia, pleurisy, influenza, or those requiring surgical operations, the return to health often depends on the thought and attention given to restorative treatment. If, however, a reconstructive like

Gray's Glycerine Tonic Comp.

is used, the result is rarely, if ever, in doubt. Unlike many remedies commonly used to promote convalescence, "Gray's" does not act by "whipping up" weakened functions. On the contrary, it improves the appetite, gives valuable aid to the digestive and absorptive processes, and reinforces cellular nutrition in ways that insure a notable gain in vitality and strength.

Weakness and debility vanish as vitality and strength appear. This is why "Gray's" is so useful and effective "after the acute diseases."

THE PURDUE FREDERICK CO., 135 Christopher Street, New York

Vermont Medical Monthly.

VOL. XX.

MARCH 15, 1914.

NUMBER 3

ORIGINAL ARTICLES.

THE TREATMENT OF NEPHRITIS.*

BY

JOHN McCRAE, M. D., M. R. C. P.,
Senior Asst. Physician to the Royal Victoria Hospital,
and Physician to the Alexandria Hospital,
Montreal; Lecturer in Clinical Medicine and
Pathology, McGill University, Montreal;
Sometime Professor of Pathology,
University of Vermont, Burlington.

The kidney is a compound organ in which the blood is brought into close and extensive continuity with a vast number of tubules which extract from it (1) water, (2) solids of various kinds in varying quantity. The tubule has at its upper end a circular space in which a convoluted capillary lies, and from this capillary exudes or is squeezed out the urinary water. The purpose of the glomerulus or convoluted capillary is perhaps best understood by calling it the "propulsor," in that it undergoes enlargement with each heart beat, and thus acts as a piston in a cylinder dealing a blow to the water which surrounds it in the circular tubular space and so driving it down the tubule. The water and solids are separated from the blood by a combination of mechanical force, vital selective power of the tubular cells, and perhaps osmosis. The separation is not confined to the glomerulus but is carried out in the whole length of the tubule, at least in all but the lowest part of the same. The mechanical force is exerted mostly in the glomerulus, but not entirely so; the selective power is exerted mostly in the tubule, but again not entirely so. The blood supply of the kidney goes first, directly, to the glomeruli; it has occurred to me to liken the kidney in this regard, to a compound engine; the glomerulus, like the high pressure cylinder, gets the blood at high pressure, and from the glomerulus, the blood, at a much lower pressure, goes to the capillaries that surround the tubules proper as to the low pressure cylinder. The selective power of the tubular epithelium is exerted to a slight extent even by the epithelium that covers the glomerulus, but to a far greater extent by the more elaborate epithe-

lium of the tubule proper. In nephritis, the tubular epithelium is damaged, and while the mechanical part of the process may not be seriously interfered with, the selective part is, and the two are so closely interwoven that we may not stimulate one without producing some effect upon the other. What is to be said about the treatment of nephritis depends upon our keeping before our eyes the state of the tubular epithelium cell. This cell in nephritis, acute or chronic, is in a state of reaction, perhaps a degeneration—and if we could examine it microscopically, would show cloudy swelling or some of the more extreme grades of change.

If we glance at the relations of such a cell, we find it lying in a thin layer of tissue juice which separates it from its neighbors, and from the underlying connective tissue with its blood vessels, lymph and other contents. Can we put into the blood any substance that will be carried in the body juices to heal a cell whose protoplasm is in a state of degeneration? Unfortunately, no, even if we knew any such substance. Even if we had such a substance and could deliver it at the door of the cell, can we be sure that the molecular structure of the cell needs and will take up this substance? No, although we know experimentally that many substances will be taken up by the cell. Our care must be then to withhold substances which may either damage or increase the intoxication from which the cell suffers. There may be substances that, if taken up into the cell, stimulate its metabolism to such an extent as allows the cell to throw out deleterious products. But we do not certainly know such drugs. We will do better to withhold any drug whose excretion takes place by the kidneys; because excretion means activity, and rest is the best healing agent that has been devised. It seems as if water were the best agent for the removal of waste and deleterious products from the kidneys, and it is so nearly inert that it is probably not worth while to distill it for such uses. Even water is enabled only very indirectly to come to such a cell, and there are times when not only it is not useful, but actually harmful—of which anon. Lapse of time is therefore the

*Read at 100th annual meeting of Vt. Medical Society at Burlington, Oct., 1913.

most useful agent in the treatment of a damaged kidney, and rest the greatest desideratum. Among the drugs that are recommended for the treatment of nephritis, there are doubtless many that are useful, but it is well to remember that a drug has to be excreted like most other things, and unless there is a distinct object to be attained, it is a virtue to withhold it.

When a case of nephritis is acute, and the patient anuric, even water is refused by the kidneys, and the giving of large quantities of water will go to increase edema. Under these circumstances, I know of nothing to do medicinally save to use the bowel and skin and to wait. If the patient survive, the output of urinary water will presently increase, the kidney thereby indicating its ability to excrete in some degree; now water may be gradually given, and a good flow may presently be obtained. When water is refused in the kidney, I know of no other diuretic that will be accepted.

The true way to treat nephritis, apart from allowing it to recover, is to assist the rest granted to the kidney substance by calling in to the assistance of the kidneys the adjuvant organs of excretion—the bowels and the skin; and a drug may do much good in this way, even if *per se* it does no good or even harm to the kidney itself. A word here as to the effect of hot baths, hot packs, steam baths and such other forms of treatment; empirically, there is no doubt of the betterment afforded the patient by these measures; yet experiment does not tell us that any considerable quantity of toxins is excreted with the sweat: it is true that a quicker excretion of water is thereby attained, and this may be evidenced by a greater solid excretion in the bowel contents. More readily understandable is the effect of moderate and sustained relaxation of the bowels. Here no doubt the poisons which ultimately lead to uremia, may be directly excreted. Cases in which high arterial tension is present are undoubtedly helped by these measures. There is no formula which ought to be remembered in the treatment of nephritis: "nephritis = Basham's mixture" is easily remembered, but is doubtless at times pernicious.

The use of the other diuretics similarly may be unwise: because the very drug that is stimulating the kidney to the production of a greater output of water may be whipping the tired horse to such an extent that tubules which were on the verge of breaking down may thereby be pushed

over the edge and be lost to the kidney. The evidences of tubular damage are the appearance of casts in the urine, and to a certain degree the presence of albuminuria: and in interpreting these signs of disease, it is well to remember that the degree in which each is prominent depends upon the amount of urine; casts may be very numerous in a concentrated urine, and sparse in a urine of large quantity: albumin which seems of great amount in a daily output of 20 ozs. will seem far less formidable in a daily output of 70 ozs. A cast may be used as a contributory means to a death sentence. I do not wish to condemn the importance of the cast, for as far as it goes it means the breaking down of the cells of a kidney tubule, and so far is an evidence of kidney disease. But one or two observations are here to be made. A cast is a very minute thing: well magnified, it attains the respectable length of many microns: but it has been estimated that there are 75 miles of renal tubules in the body, so that it needs a good many casts to denude a length of tubules which would reach nearly to Montreal. While we are at statistics the same estimation allows us to make some further interesting statements. How much urine does a kidney tubule in the course of a 70 year life excrete? Nearly 3 drams. If one were to draw any conclusion from these figures, it would be to place a good deal of trust in nature who has provided on so vast a scale for emergency. I do not want to minimize the value of what tests we possess: for casts and albuminuria are straws which show which way the wind blows. But we do well not to dogmatize too strongly upon evidence given us by these indicators.

Lately there have arisen methods of testing kidney competence, which give us fairly practical return. It has been determined that certain relatively inert substances can be put into the body by the alimentary canal or by injection, and the power of the kidney for excretion measured by the promptness with which these begin to appear in the urine, and the rapidity with which their total elimination is accomplished. Without dealing too specifically with these drugs, it may be recalled to you that at present the most favorably regarded drug is phenolsulphonephthalein, of which a fixed amount is injected subcutaneously: the urine is measured and the output of the drug estimated: if a properly high percentage is not excreted in a definite time, the kidney is in a state of functional incompe-

tence. The practical use of such information is that an operation of election may not safely be undertaken at such a time; a subsequent test may reveal a more favorable state of body. This test is widely used at present in surgical work, and certainly gives information that cannot be obtained by the older modes of observation which dealt only with gross tests like the presence of albumin and casts. A kidney may be allowing the last named to pass, and yet be sufficient for the needs of the possessor.

Nephritis of the acute variety may be set up by a variety of causes of which cold is considered one of the most important. We suppose that the surface of the body may be chilled, and thus an inequality of blood distribution be caused; in one person the upper respiratory tract becomes congested, and the common cold in the head results. In a person whose kidney has previously been damaged, it is conceivable that a congestion of the kidneys may have a parallel effect. But what damaged the kidney previously? Without doubt, I think, the acute infections, particularly those of childhood. Scarlet fever and measles are especially important among these.

Of all acute infectious diseases, scarlet fever has the greatest power as a causative factor. My own experience in this matter has been striking: in 2,200 cases of scarlet fever treated alike and conservatively, 10 per cent. showed a disturbance of the urine subsequently which might correctly enough be called nephritis; if a more strict interpretation were employed, 5 per cent suffered. With regard to the latter class any physician in the world would have said these were cases of nephritis. Let us consider now, how great a number of persons have had scarlet fever: if we count that only one-tenth of these have had damage to the kidneys, what a considerable foundation there is for subsequent nephritis. Add to this the effect of measles, diphtheria, malaria and septicemia and we have a great group of people in whom a subsequent nephritis will cause us no surprise.

The treatment of a threatening, or present attack of nephritis, whether acute or an exacerbation of the so-called chronic nephritis, is, then, as follows: Rest to the body, rest to the kidneys, a withdrawal of any substance whatever which may increase the work of the kidney, and activity of the adjuvant systems, the bowels and the skin. With the positive treatment of nephritis every practitioner is familiar, add to this the

negative treatment—the treatment by those things that one does not do. There is no specific drug; there are probably few if any drugs that at some time or other do not do actual harm. Try to make it the rule with any patient whose kidneys you know to be damaged to give no drug for any purpose whatever, without remembering that you are about to ask his kidneys to excrete it or some part of it, and they may suffer in so doing. By no means withhold a drug if you think it necessary, for the damage to the kidney may be much the lesser of two evils; but do not forget about the kidneys and give him medication merely as a routine. As far as possible, too, apply the same rule to his foods. You can quickly explain to the average man what is desired, how that some foods are the subject of perfect combustion in the body, and leave little ash to be thrown out; whereas others leave a large amount of seed-product or ash, which has to be removed. The patient will then have a rational basis for his guidance, and he will avoid indiscretions in diet, which previously he regarded merely as a transgression against you, but which now he sees are a transgression against himself. We need not be afraid of taking the patient into our confidence; if we tell him all we know about the effect of foods upon the kidney, he will not be much better informed than he was before.

This point of view in therapeutics of nephritis is in no sense that fashionable thing “therapeutic nihilism.” Quite the contrary! If one says: “Give no drugs,” it is a far different thing from saying: “There is nothing to be done.” There is much to be done, but it is to be of a sane kind.

The discussion was opened by Dr. E. H. Martin of Middlebury.

Mr. President, ladies and gentlemen: When I learned that I was to discuss this paper, I thought it would be necessary for me to look over some of the later things in regard to the treatment of nephritis, so I took down a large new book that I had on the subject and I tried to look it up. I looked over page after page and I finally quit and I made up my mind that if all the remedies in the *Pharmacopoeia* were put into a bag and any one drawn out it would prove to have been recommended by some one as beneficial in nephritis.

I am glad to have heard a paper so simple and so sensible as this, and I feel that we have been given something of real practical value to work on. So far as the presence of casts is an indication of what the course of the disease will be, they are of importance taken in connection with other indications, but of themselves, in the absence of other symptoms they do not mean so much. The presence of a few casts is far from proving that a man is soon to die from nephritis.

I learned this from an experience that came to me about 10 years ago. A man came up here to Burlington, consulted one of the eminent physicians and had his urine examined and was given to understand that he had casts in his urine and so was not long for this world. He came to consult me about some business matters, and said if he was only going to live a few months he was going to sell out, but if he was going to live he wanted to make some money out of it. I told him that if I was in his place I should work as long as I could. After eight years he came back again and said he had been to Rutland and had his urine examined there and had been told again he had casts. He asked the doctor if that was serious and the doctor said, "Oh hell, yes," and so he came back and asked me the same question, and I again told him to go on and keep up his business. This man is now about as well as he was ten years ago.

THE EPIDEMIOLOGIC ASPECTS OF TRAVEL.

BY

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The movements of mankind have exerted in the past, and will in the future continue to exert, a great influence in the distribution of disease. Disease follows in the wake of trade and countless times has the trader, the emigrant or the explorer brought disease into countries, islands or isolated communities where disease formerly did not exist. Through immigration relapsing fever, leprosy, smallpox, influenza, measles and hydatids were conveyed from the Old to the New World. The dissemination of leprosy throughout Australia, the Malay Peninsula and the Far East generally was always laid at the door of the importation of Chinese labor. The Russian peasantry who annually desert their villages in quest of labor in other and far distant parts of that empire have frequently aided in the spread of cholera and syphilis. It has been no uncommon thing in the past for plague, beriberi, epidemic cerebro-spinal meningitis, and other maladies to have been frequently carried by sea or land over vast distances, and even from one hemisphere to another.

As an agent of disease diffusion pilgrimages to religious centers occupy a prominent place. To-day India is the most usual scene of these gatherings. It is no unusual spectacle for two or three million people to assemble and par-

ticipate in the great bathing festivals such as are held at Hardwar and Benares. Equally large religious conclaves take place at Kerbela and Nedjef in Mesopotamia, and the Moslem pilgrimages to Meshed and other shrines in Persia, Mongolia and elsewhere, also the annual Moslem Haj, or pilgrimage to Mecca and Medina. Many virulent diseases such as cholera, plague and smallpox have frequently been spread through these unlicensed religious festivals and pilgrimages. The crusades, which really had for their object military conquest and plunder, under the guise of religious pilgrimages, are believed to have spread many diseases throughout the world. Annual religious feasts are becoming so fertile a source of disease and causing such a great majority of epidemics in the Far East that several of the European countries have paved the way for an international quarantine.

The movements of men in time of war, together with the evils and hardships attendant upon military campaigns, have in the past proved powerful factors in the spread of disease. Typhoid fever has been well called the "destroyer of armies." Smallpox, typhus fever, measles, scurvy and even malaria have on innumerable occasions swept through not only the armies in the field, but the populations of besieged cities. The moral and physical decadence of Rome first manifested itself in the army, and malaria was the principal contributory cause. With the cessation of the Napoleonic campaigns after 1815 there ensued an almost abrupt termination of the widespread ravages of typhus fever. In 1878 when the Russo-Turkish war was at its height, Constantinople was crowded with typhus infected refugees. The spread of leprosy was given a great impetus in the Far East in the latter years of the last century, and all due to no other cause than the disturbance in Crete. It is not war alone that is responsible for the spread of disease, but the conditions which naturally follow in the wake of military expeditions such as overcrowding, soil and water pollution, ill prepared and often not sufficient food, forced marches, scant and insufficient clothing and a general lack of personal hygiene. Fire, famine and pestilence have always attended war and always will, and the only redeeming one of the trio thus far has been fire.

Beri-beri was not of frequent occurrence during the late Russo-Japanese conflict, as long

as the armies kept moving in either attack or retreat. Beri-beri is a place disease, and occurs among soldiers stationary in barracks, but not during an active campaign. Plague is another disease which is not calculated to attack a quickly moving army. The one way to get rid of plague is to camp out, and away from the focus of infection, and, should the disease reappear, to again strike camp and proceed further afield. For beri-beri and plague, therefore, active campaigning is a decided prophylactic. Typhus fever is another ailment foreign to armies on the march, and even cholera is less likely to prevail among troops quitting quarters rapidly than when they are hemmed within a beleaguered city, or cooped up in barracks within an infected area.

Yellow fever has been particularly fatal where large numbers of non-immunes such as soldiers, have been brought together within the tropics. In this respect it has certainly been more fatal than cholera or plague in the East. Military expeditions in the tropics have been almost certain to suffer from this disease, and there have been several instances of large bodies of men being all but entirely swept off, and the objects of the expedition frustrated by this disease alone, as the French invasion of Haiti in 1802, in which out of 25,000 men, nearly 22,000 died of yellow fever in one season, leaving the remainder at the mercy of the enemy, who scarcely had to fire a shot.

To-day, the possibility of the travel that will soon go through the Panama Canal, acting as a means of transporting diseases, namely, yellow fever and plague, from the New to the Old World and *vice versa* is being seriously considered. It has been pointed out that by this route ships would travel along a track which would be wholly within the tropics, while the temperature would prove not only favorable to the disease, but also to the *Stegomyia fasciata*, the mosquito by which yellow fever is conveyed to man. Biologic investigations have demonstrated that the *Stegomyia* is capable of living and of conveying infection for some fifty to sixty days, and as the voyage between Panama and the Far East would not be over thirty days at the most, the danger of introducing yellow fever into Asia by this route is no fanciful dream, but a question of grim reality.

The dangers likely to accrue from the introduction of yellow fever into the densely popu-

lated and insanitary cities of China would be appalling. That the disease would be limited to the Chinese coast towns there is no probability. The frequent intercourse between China and Japan, between China and the Malay Peninsula, India and the islands of the Archipelago and Australia, would open up a pathway of infection and the certainty of the prevalence of a scourge which it is fearful to contemplate.

Scurvy was once the fear of the seaman. Scurvy has practically disappeared from the mercantile marine owing to the ships carrying lime-juice. The disease to-day is rare and about the only place it is to be encountered is on the north-west frontier of India. In the China war of 1860, in Looshai in 1871, and in Suakin in 1885, there were outbreaks of scurvy. The great Arctic explorer, Nansen, and his band, on their last dash to the pole had quite an experience with scurvy.

Another adverse, though necessary factor of our civilization is the universal range of trade and commerce which plays an important rôle in the transport of disease. Modern methods of communication transcend all natural barriers to the dispersal of animal organisms. In the means provided for the comfort of man they ensure the causal organisms of disease or their transmitting agents sufficient safety against the necessary influences of heat, cold, light, moisture or drouth, and at the same time they convey these organisms with all possible speed to new environments where they may find conditions suitable for existence. Finally through the introduction of infected individuals and the general intercourse of once widely separated races, the former limits of diseases are being entirely obliterated, and the human parasites of one geographical area are making their appearance in widely distant regions.

The introduction of new human parasites is not always attended with infection of new areas. Thus *Filaria Loa* has been introduced many times into Europe and North America without as yet having secured a foothold on either continent. *Dracunculis medinensis*, the Guinea worm, was brought through the slave trade into South America, the West Indies and the United States. In some parts of South America it became endemic; in West Indies it obtained a temporary footing, while in the United States it was unable to become established.

INFANT MORTALITY.*

BY

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The average physician does not realize his responsibility in the important work of lowering infant mortality. By his indifference he opens the portals of this important field of preventive medicine to social workers and philanthropists. This is the age of the baby. War characterized the age of man; religion the age of woman; but sacrifice and service typify the age of the child. Socrates in his wisdom wrote that "In every work the beginning is the most important part, especially in dealing with anything young and tender." It was the baby who first awakened that most wonderful and sacred force, the mother love, and aroused that most powerful and protective influence—the father love. The baby is the citizen of the future and has rights we cannot afford to neglect. Dr. Newsholme of London claims that the care of the child is the index of civilization and infant mortality the most sensitive sign we possess of social welfare. Ruskin in 1867 said that one of the most accursed signs of that day was the brutality with which it suffered the neglect of children.

The subject of eugenics is freely discussed now-a-days and people are coming to the idea that it is not our ancestry that we should worship but our posterity. A good family history is to be preferred to a large family purse when it comes to matrimony.

There is a demand to-day for better babies; not necessarily more, but healthier, stronger ones. The Honorable John Burns, the Minister of Health to Great Britain, epitomized the whole subject in a few words. "Parents should be cleanly wed, the children nobly bred, wisely fed, and firmly led."

Infant mortality is the ratio between the number of deaths under one year of age to one thousand living births. It should not be expressed in relation to the entire population or to the total number of deaths.

There is no uniformity in the methods of computing infant mortality in the different cities and states in this country or in Europe so that it is impossible to make any just comparisons.

The United States census registration area only comprises 58% of the entire population. Dr. Cressy L. Wilbur, Chief Statistician of the Bureau of Census, estimates that approximately 300,000 babies die yearly in the United States before they reach the age of twelve months. In ratio to the births the infant mortality throughout the United States is 150 per 1,000 or in other words one baby in seven dies before it reaches a year old. In Great Britain the infant mortality is 130 per 1,000 living births, while in New Zealand there are only 62 deaths in every 1,000 living births. Russia on the other hand has 240 deaths and Chili 331 per thousand births. In New York State, excluding New York, the infant mortality was 121 per 1,000 births, while in New York City in 1912 there were 105 deaths to every 1,000 births. In looking over the report of the Vermont State Board of Health for 1911, I find reported 7,628 births and 1,112 deaths under one year of age, making an infant mortality of 145 per 1,000 for the State. The city of Burlington had 556 births and 128 deaths so that the mortality reaches the very high number of 230 per 1,000. When you compare the mortality of New York City of 105 and of London, England, 90, there surely must be something wrong in the care of infants in the city of Burlington, with its very high mortality of 230. When we come to estimate the number of infant deaths among the total deaths, we find there is a pretty constant ratio of 25%, that is, one out of every four deaths is that of an infant. Someone has stated that the business of being a baby should be classified as an extra hazardous occupation, and Bergeron estimated that "A baby who comes into the world has less chance to live a week than an old man of ninety, and less chance to live a year than one of eighty."

Adult deaths in a great measure are inevitable but many infant deaths are preventable. Careful students of the subject estimate that from 30 to 50% of the infants' deaths are preventable, hence our stimulus for finding a remedy.

The first step in the prevention of infant mortality is a careful study of the situation. The registration of births by physicians is mandatory by law yet we all know that it is shamefully neglected. Dr. Wilbur says that "Nothing can be done in preventing infant mortality until we know where the babies are and when they arrive," and he makes the astounding assertion that most of the

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cities in the United States only register about one-half of the births. Dr. Goler of Rochester had for years made a determined effort to secure a complete birth registration. In order to verify his records he had copies taken of the baptismal records of several Catholic churches, which he checked up with the birth certificates in the health department, and found that nearly 25% of these births had not been recorded. The error must be much greater in cities and communities where no special effort is made to secure a complete registration. The birth certificate is an actual asset to the child throughout his whole life. The prompt record of a child's birth notifies the public health authorities and in cases where the family are unable to afford adequate medical and nursing care, these can be brought at once to the mother and child. There is no doubt but that many cases of ophthalmia can be prevented by early registration. Prompt notification of a baby's birth increases the efficiency of all public and charitable infant welfare work. The legal uses of birth registration are recognized by lawyers who often have difficulty in producing legal evidence of birth in cases of titles, insurance, inheritance, etc., etc. The new labor law in New York State requires that every child under the age of fourteen has to produce his birth certificate to prove this fact and in New York City this is also required by the public schools. In the latter city in 1911 there were nearly 12,000 certificates for birth records made and over 100,000 free statements instituted for school and employment purposes. Vermont, I am pleased to say, is one of eight states in the Union included in the Provisional Birth Registration Area of the Census Bureau. Marriages are certified, the farmer registers his calves and pigs, and the physician should be even more particular in recording the births of babies. Dr. Porter, Commissioner of Health, in a letter recently sent to the Health Officers throughout New York State regarding the birth registration law wrote: "The time for leniency has passed, and personal feelings on the part of physicians or those whose duty it is to see that the laws are obeyed must be set aside. It may as well be known now that the law must be obeyed and the proper steps for its enforcement shall be taken hereafter as violations of the law occur."

The birth rate is steadily declining in all highly civilized countries. This makes the saving

of infants' lives a matter of national importance. It has been said that one of the great plagues of the Twentieth Century is the plague of empty cradles. In France the death rate is higher than the birth rate. In England in 1880 the birth rate was 35 and in 1910 it was 26. In New York State in 1860 there were 520 children under four years of age to 1,000 women of child-bearing age, and in 1910 this number had fallen to 350. In one of the exclusive residential wards in New York City, the birth rate is 4 per 1,000 while in the tenement district it is 45 per 1,000. Immigration brings up the birth rate in our country. A short time ago, some investigators collected statistics from families in the Back Bay district of Boston taking in a territory five blocks wide and eight blocks long. They found that of the 772 families questioned, 599 had no children and that there were 373 children in the remaining 173 homes, or a proportion of over two children to each family. A closer analysis and limitation of the word "child" to those below the age of seventeen, would reduce the number by over one-third.

A study of the causes of death during the first year of life reveals many interesting facts. One-third of the deaths occur during the first month and the number gradually diminishes month by month until the end of the first year. The largest single group are gastrointestinal disorders, including marasmus and inanition. These comprise about 37% of the total number of deaths. Congenital malformations, prematurity, and congenital debility form the next largest group or about 32 per cent. The acute respiratory diseases constitute about 19 per cent of deaths under one year. Analyzing still further we find that the high figures of mortality occur during the months of June, July, August and September. These deaths are mainly due to disturbances of the gastrointestinal tract, although the premature and congenitally weak infants are more apt to die during those months. Dr. Meyer of Berlin has classified the effect of the summer heat on infants: 1st, direct; heat stroke; 2nd, indirect; including,

- (a) A lowering of the babies' tolerance.
- (b) A decrease in its immunity against disease.
- (c) A less favorable course of alimentary disturbances.
- (d) An increased decomposition of its milk.

The presence of moisture in the air is of importance as it is well known that when the humidity is high the effect of the heat is more depressing. Our experience at the Infants' Hospital in Albany for the past ten years shows that the hot weather is more dangerous late in summer than in the beginning of summer because the children have lost the power of resistance.

Dr. Davis of Boston made a study of the mortality of babies fed on the breast and those artificially fed and found that in Boston one out of every thirty babies died before a year old if breast fed and one out of every five died in the first year if bottle fed. The death rate in Boston, therefore, would be 60% less if all the babies were breast fed. The British Government Report on Infant Mortality in its final summary states that the "abandonment of breast feeding without adequate cause is a most important factor of excessive infant mortality." Mothers should be instructed and encouraged to nurse their infants and doctors and nurses should insist on maternal nursing whenever possible. Deprived of its mother's milk, the baby must be artificially fed. Impure milk and tainted milk are important factors in the etiology of summer diarrheas. The milk must be carefully and zealously guarded "from pasture to pail, and from pail to palate."

Neglect, ignorance and poverty may perhaps be called the three fundamental causes of infant mortality. Poverty means poor health for the mother, lower intelligence, lack of energy and general inefficiency, and forces people to live in crowded unsanitary surroundings. Poverty forces mothers to work for a living, depriving their babies of breast milk. These babies are unable to thrive and develop in the poverty-stricken homes into which they are born. Infant mortality might be termed "a class mortality" and it would seem as though intelligence, care and money purchase not alone health but life. It is excessive among the poor and low among the well-to-do. Paul Leicester Ford, in *The Honorable Peter Stirling*, says, "The future of this country depends on its poor children. We can't do too much to help them. If they are to do right, they must be saved from ill health, and ignorance and vice; and the first step is to give them good food and air so that they shall have strong little bodies."

It is the duty of the state, of the community, and of the physician to give the baby of the

poor a fair chance. Infant mortality should not be a question of the survival of the fittest, for it is our task to see that every baby is made fit.

Intelligent effort is being made in several of our cities to educate the mother before the baby arrives. This prenatal work should be more widely extended, not only in the cities but in the country districts. In New York City among 1,000 consecutive births in which there had been no prenatal education 41% of the babies died in the first month and there were 48 6/10% still births. Among 1,000 consecutive births in which prenatal work had been carried on 23 6/10% died in the first month and only 19 6/10% were still born.

Twenty years ago, Professor Budin in Paris appalled by the large number of deaths among infants after leaving the maternity hospital with which he was connected, inaugurated a weekly meeting of the mothers and the babies to discuss their care and feeding and give a general oversight to the babies' development. These he called infant consultations. This was soon followed by Professor Variot, who established stations where milk properly modified and sterilized could be furnished babies who were artificially fed. These he termed *Goutte de Lait*. These *Goutte de Lait* or Milk Depots spread like wildfire throughout civilized Europe so that now there is scarcely a city of any size in Europe in which there is not an infants' milk depot.

A Public Health Commission, appointed last winter by Governor Sulzer to draft a new public health law, recommended that "each city with a population in excess of 10,000 and having an industrial population should have one infant welfare station, and that larger cities with an industrial population should have one such station for each 20,000 inhabitants." The infant welfare station is a combination of the consultation and the *Goutte de Lait* and its object is more preventive than curative. The aim is to take the well child and keep it well. Mothers are encouraged to nurse their babies and when necessary are given expert medical advice. A weekly report of the babies' weight and length is kept and the mothers are instructed in the elementary principles of care, feeding, and dressing of babies. One of the most important features of these infant welfare stations is the instruction of the mothers in their own homes by visiting nurses. When breast milk is not avail-

able these welfare stations provide clean, pure milk adapted for the needs of each individual baby. During the past summer there were thirty such welfare stations conducted in cities and villages in New York State outside of New York City. The total enrollment was 3,135 babies. Of these 89 died, which gives a percentage of less than 3. This is two-thirds less than the general infant mortality throughout the state. The reports show that of the babies enrolled 33 per cent were breast fed, 59 per cent bottle fed, and 8 per cent mixed feeding. In one of the cities, namely Utica, these welfare stations were established in the schools and the total cost for three months' work, including the nurse's salary and all expenses, amounted to \$462, and as 382 babies were taken care of, it gave a cost of \$1.20 per baby or 40c a month.

The milk problem is one that demands serious consideration on the part of the medical profession. They should be the leaders in demanding the improvement of the local milk supply and should make a study of the sources and distribution of the milk in their respective localities. Certified milk is milk produced under the supervision of local medical societies but it is not obtainable outside of the larger cities. It seems to me that local physicians could set a standard for purity, safety, and quality, which could be supplied by a local dairy. The dairyman appreciates that the physician's advice is often sought regarding milk for the baby and any intelligent dairyman would take special pains in producing milk in order to receive the endorsement of the physicians. The doctor should instruct the mother in the care of the milk in the home and point out to her the importance of keeping it constantly on the ice.

The physician can do a good deal to overcome the ignorance concerning the care and feeding of children by giving practical talks and illustrated lectures in the schools, before Mothers' Clubs and Societies. His knowledge and experience particularly adapt him for this line of educational work and he should be the leader in his community in the great work of preventive medicine.

Professor Dietrich of Berlin, in a recent address, said it was formerly believed "that the rate of mortality among children who had not reached the first anniversary of their birth was a wise dispensation of nature intended to prevent children with a weak constitution becoming

too plentiful. Today we know that a great infant mortality is a national disaster—on the one hand because numerous economic values are created without purpose and prematurely destroyed, and on the other because the causes of the high rate of infant mortality affect the power of resistance of the other infants, and weaken the strength of the nation in its next generation."

DISCUSSION.

C. K. Johnson, M. D.

Mr. President and Members of the Society: I do not feel that I can add much to Dr. Shaw's excellent talk, but I would like to emphasize one point especially, and that is—infant feeding in regard to diarrhea. An investigation in Boston in 1911 showed that of 621 deaths under one year of age, from diarrheal conditions, 85%, I believe, were bottle-fed infants and but 15% breast fed. If this is the case, it is undoubtedly the same elsewhere and should be the keynote to at least one method of reducing infant mortality, and I think we as physicians are often guilty of depriving the infant of maternal nursing. I say in many cases perhaps a physician is apt to easily recommend the use of the bottle. Not long ago Dr. McClanahan reported a series of 400 bottle-fed infants in which he had especially asked the mother the following question: "Did your physician say anything in regard to mixed feeding before weaning your infant?" Out of the 400 there were less than a dozen replies in the affirmative. I find many infants are unable to get sufficient nourishment from the breast the first week or ten days. In fact I doubt if inside of a period of less than two weeks we can determine whether or not a mother can nourish her infant. I do know that in many of these cases we can help out by the use of the bottle as supplemental feeding, the mother eventually having an abundant supply. This has been well shown by Southworth, the pioneer in supplemental feeding. During the past year I have had many infants whom I have carried along on the breast three or four months simply by supplemental feeding. We all know there is something in breast milk of importance to the infant that analysis will not show. A recent investigation in Berlin with reference to seasons and infant mortality showed a death rate in winter in breast-fed infants of two per thousand; in summer, twenty per thousand; in bottle-fed infants in winter, twelve per thousand; in summer, one hundred and fifty-eight per thousand.

Dr. Shaw has spoken of our high infant mortality in Burlington. In our recent baby contest we had one hundred and eighty-one babies; sixty-seven per cent. were breast-fed. I think this is a good average. If we still have a high death rate, this might further be reduced by being a little more careful with our feeding cases.

I especially wish to thank Dr. Shaw for the talk he has given us this morning, and I hope there are others who will enter into the discussion.

Dr. Dalton—I feel that I ought to say just a word in the defence of Burlington in regard to its high rate of infant mortality. Of course, you know that right here in Burlington we have two very large orphanages, one a Catholic institution and one a Protestant. Babies are brought to these homes,

especially to the Catholic home, in all stages of their early life and a great many are illegitimate children with low vitality. These children when they die, as so many of them do, all go in on our mortality statistics. We have here also a rescue home for women, where quite a large number are treated, coming in the early months of pregnancy, and the child is usually adopted or put into some home or into an orphanage. I feel that this somewhat explains our infant mortality. As a matter of fact, Burlington is a dumping ground for children from this vicinity and Northern New York. There is one thing more I want to say, and that is in regard to public instruction. I don't think physicians as a rule talk enough in public. They may talk a great deal in private and do a great deal to educate patients and families, but they do not talk enough in public. I feel that a physician practicing in a town or a city should make it a point to appear before organizations of various kinds in his town or city and give instruction, and be particularly candid about medical matters. This matter which Dr. Shaw has spoken of in regard to children writing letters in his city is a case in point that this does a great deal of good. I believe physicians should go out more and give public instruction, and we positively must do this. The public would be benefitted and a great deal of our work in contagious diseases eliminated by frequent public instruction in health matters.

Dr. Shaw—I am glad to have Burlington's good name vindicated. Dr. Dalton's explanation is one which had occurred to me but which I had not had time to investigate. In one city in New York State practically the same condition existed several years ago, and on investigation it was found that there was an infant asylum there receiving young infants from many states in the Union. By the earnest efforts of the attending physicians, with the cooperation of the sisters in charge, the mortality in this institution has been materially reduced. This was done by giving individual attention to each baby and a careful regulation of the feeding. Infant mortality in institutions is a separate problem and one which I did not enter upon. I know of two infant asylums in which the mortality has been cut down to 16 and 18 per cent. respectively.

Dr. H. D. Holton—I do not know whether there is any doctor here whom I have ever written to, but I know I have written some very gentle letters to certain delinquent ones, then some months afterwards I have written to the same person emphatically, and a little later I have again written to them in unmistakable language insisting on returns by next mail. It ought not to have been necessary to have written at all. I resigned my position as Secretary last December, about three weeks ago I received a report of eight births which occurred a year and eight months before. Now the statistics for that period were all made up. We have to go all over them, at least Dr. Dalton has to correct them. I do not know whether it is carelessness or laziness the reason they do not report. I cannot quite understand it. I suppose that it may be if you have been out all night and you come home tired, and lay the reports down and forget about them, and don't come across them until a month or two afterward. Now a little care would make a great deal of difference. You see my hair is quite white from the letters I have had from the Bureau in Washington because I did not report in full. In my last annual report to the Bureau they wrote back

and asked: What is the matter with Burlington? There are many deaths of infants. I gave them the same information that Dr. Dalton did: Burlington is a sort of dumping ground with two infant asylums.

Now what kind of a reputation do you want Vermont to have? Sixteen years ago, when I first took up the matter of reporting vital statistics, the State was about 52nd in rank on reporting these statistics. Well, by dint of these letters and your cooperation, we have brought it up to the third or fourth.

If you will cooperate with Dr. Dalton better than you have with me the State may be at the head. Vermont is a small state, but it required the labor of one girl who copied the births to be sent to the Bureau in Washington. I had a man about three months in the year who made up the tables of deaths, and it took him all that time. It is not an easy task. Aid the Secretary in placing Vermont in the first rank.

MODERN ANESTHESIA.*

BY

DR. E. I. HALL.

In the general upheaval of old pathology and therapeutics and the rapid introduction of new ideas of diseases and their treatment, the subject of anesthesia is holding its own in importance, and in the efforts being made to discover the best anesthetic and mode of administration. In fact there has never been a time when so much scientific work was being done along these lines as at the present, and, as a result, we find our literature filled with new methods and new apparatus, and the immense difference it makes to the patient and also to the surgeon, what form of anesthetic is used and how administered, is coming to be more appreciated daily.

The time is coming—if not already here—when it will not be considered that anyone who is willing to hold a cone and saturate the confiding patient with ether or chloroform, is competent to look after this important part of a surgical operation, or that a bystander or amateur nurse will be allowed to preside at the ether or chloroform mask during an instrumental delivery or other operation connected with obstetrical cases.

The question, then is, what anesthetic shall we use for general anesthesia and how administer it?

I have recently seen many of the professional anesthetists of New York at work, both in hospital and in private cases, and felt fully repaid for the time spent by having many uncertainties settled, and by the knowledge that those more

*Read before the Rutland County Medical Society.

capable of judging, were at work on the same questions, testing and trying out all that is new, and that they were still holding fast to much that has stood the test of years.

I shall not attempt a learned discourse upon my subject, for not only am I not learned myself in the matter, but, in the present unsettling of old ideas and the introduction of a multitude of new ones, *no* one can be said to be authority, and no *one* method is agreed upon by *all*, to be the only one for general use.

I shall therefore confine myself to a sort of resumé of what I have been able to glean from the magazines of the work being done, and of what I saw in New York, and try to draw some conclusions which may be of use to us for present guidance.

I will mention first Dr. Gwathmey's latest thing in anesthetics, rectal anesthesia, by the use of oil-ether.

I was invited by the inventor to witness the application of this method, which was done before about fifty doctors of prominence, who expressed themselves as delighted with the demonstration.

The operation was a laparotomy lasting over two hours and the results were ideal. The ups and downs of the usual ether narcosis being absent, also the too common strangling, choking and rattling of mucus in the pharynx. One could imagine, however, that in some cases, the anesthetist might wish he were not so entirely committed to his dose, although farther absorption may be controlled by the removal of what remains in the rectum by a tube.

The technique is as follows: An ounce of castor oil is given the night before the operation, and the following morning soapy enemata are given every hour until the water returns clear. One hour before operation $\frac{1}{8}$ gr. morphin is given and repeated if there is much excitement, and a suppository of chloretone—10 gr.—is introduced per rectum in order to render the bowel less sensitive to the oil-ether.

The mixture for adults is 2 ounces of olive oil and six ounces of ether. A lesser quantity is given for younger patients or of light weight, though the proportions remain the same. For children under six years of age a 50% solution should be employed, allowing one ounce of the mixture for every 20 pounds of body weight. From six to twelve years of age, use a 55 or 65% solution. From twelve to fifteen years old use the same percentages and amounts with possibly

the addition of $\frac{1}{12}$ grain morphia and $\frac{1}{200}$ grain atropia given hypodermically as a preliminary. From fifteen years upward the 75% mixture is used, the same rule of one ounce for every pound of body weight. For adults weighing 160 pounds, eight ounces would be required. This represents the usual dose for the average patient.

A small oiled catheter is inserted three or four inches into the rectum, and through a funnel the mixture is poured very slowly, the patient being in the Sims position, at least five minutes being required to introduce the eight ounces.

At the end of the operation two small rectal tubes are introduced well up into the colon and cold soap suds introduced through one tube and drawn off through the other. Three to four ounces of olive oil are injected, the tubes withdrawn and the patient returned to bed. It requires from five to fifteen minutes for full relaxation, according to the percentage used, and the effects last longer than from inhalation anesthesia.

Dr. Gwathmey believes that this method may supersede all others for general anesthesia, and possibly it may when by some graduated method of administration we shall be able to control the amount absorbed to suit the needs of each case and protect the patient from an overdose. The result of this method is a very even anesthesia with no stage of excitement, or very little.

Perhaps the next newest method is Dr. Crile's Anoci-Association or nerve blocking. As most of us are familiar with this method through the various articles in the medical journals by Crile and others, I will only speak briefly of the technique, quoting Dr. Crile himself: "A preliminary dose of morphia $\frac{1}{6}$ gr. and scopolamin $\frac{1}{150}$ gr. is given, then following induction by nitrous oxide the operator precedes the division of each tissue by the infiltration of a $\frac{1}{400}$ solution of novocain. Each tissue as it is infiltrated, the skin, subcutaneous tissue, the fascia, the muscle, and finally the peritoneum are subjected to pressure in order to spread the anesthetic, and then divided within the blocked zone."

(The question here arises whether the blocking is not more properly the result of the infiltration itself, as quite large amounts of solution are used rather than from absorption of the novocain).

"The peritoneum is finally everted and a 0.5% solution of urea hydrochlorid is infiltrated along the proposed line of suture.

The effects of this drug last several days and should eliminate or at least minimize the post-operative wound and gas pains, and by so much minimize post-operative shock."

Dr. Crile uses the gas oxygen for induction, as he considers the after effects less harmful than from any other form of anesthetic.

My visit to New York was almost wholly for the purpose of looking into the gas oxygen method, but I was much surprised to learn that very little use is being made of it, and this for several reasons, one being that expensive and complicated apparatus is required (or at least used), another reason being that the technique is more difficult, and not the least objection is the expense, as nitrous-oxide is quite expensive used in quantity.

However much gas is used muscular rigidity is never wholly abolished, and it becomes necessary to supplement with ether at times, especially if tension is made upon organs or tumors, and when skin incisions are being closed. The patient is more or less cyanosed, or else is very close to the border line of returning sensation, and the operator and anesthetist are kept at tension constantly. Some of this is overcome when preliminary use is made of morphia, and scopolamin, but there is a growing feeling among anesthetists that there is danger in using respiratory depressants such as scopolamin, and also in the use of morphin because it so abolishes pupillary reflex that one of the most valuable indications of danger—namely, dilatation of the pupil—is lost.

Dr. Herb, instructor in anesthetics at Rush Medical College says: "A study of the reports of deaths or other bad results, clearly shows that premedication was actually responsible, either indirectly by intensifying the action of the anesthetic or directly through its continued action. There are always symptoms from ether which give adequate warning of approaching danger, and its action is so evanescent that the patient revives in a short time when it is discontinued; but, when enduring drugs have been previously administered, hours may elapse before the patient is past danger."

Scientific men cannot fail to appreciate the reasonableness of maintaining a factor of safety by protecting the respiratory centers and by exercising all possible care in the technique of anesthetization.

Chief indication for the use of morphin and scopolamin is when *local* analgesia is employed.

Contra indications in patients whose respiratory centers are likely to become depressed through operation procedures.

Obstructive dyspnea due to growths within or without the trachea causing pressure or exophthalmic goitre.

In operations about the mouth and throat.

In case of debilitated and cachectic persons or those suffering with continued sepsis.

In patients presenting any degree of stupor, those susceptible to morphin.

In children, elderly people and when untrained, inexperienced anesthetists are administering the anesthetic.

Dr. Crile says in Keen's *Newer Surgery*: "The skillful administration of nitrous-oxide-oxygen is a delicate art, which can be mastered only by one possessing the power of quick observation, with the ability to make quick judgment of the state of the patient from moment to moment, and by one who has a cool head and the opportunity for constant practice."

Teter says that "Nitrous-oxygen anesthesia is the most difficult of all to administer; is unsuitable in young children and old people, in strong, vigorous men and those of alcoholic habits."

Insufflation for ether anesthesia has been done in 650 operations upon human beings with entire success by Dr. Elsberg of Mt. Sinai and Dr. Peck of Roosevelt hospitals, but others have not been so fortunate, as several deaths are reported. In this method ether vapor is driven by means of external pressure through a tube which has been introduced through the mouth, larynx, and deep into the trachea.

It is considered one of the safest means of anesthesia, for in case of respiratory failure the means of relief are at hand, as artificial respiration can be maintained by withdrawal of the ether and continuing the insufflation of pure air or oxygen.

It has been found difficult to introduce the tracheal tube in many cases, and resultant injuries to the mucosa of the larynx have followed, giving rise to spasms of the glottis, and we are warned by Dr. Meltzer, who has done so much for this method, that "the use of intra-tracheal insufflation in human surgery ought to be carried out with great caution, especially at the early

stage of induction, lest unfamiliarity with some little details might lead to disastrous results."

Dr. Peck, surgeon to Roosevelt hospital, says: "The difficulty in intubating and the necessity for full surgical anesthesia before this can be accomplished makes this method unsuitable for many short operations."

This method certainly has many advantages, but it will never be much used outside of hospitals probably.

Intravenous anesthesia likewise will hardly become generally used, while it has many features of excellence. This so-called infusion method is done under the same technique as is used in saline infusion. Having preceded the opening of the median basilic vein by the hypodermic use of morphin, $\frac{1}{6}$ gr., and scopolamin, $\frac{1}{150}$ gr., the Y shaped canula is introduced. In order to prevent clotting Dr. Kummel, of Hamburg, Germany, writes: "We endeavor to make a continuous introduction of fluid, using the ether saline until anesthesia is produced, then closing that tube, open the one conveying a 4.1% physiologic saline solution, thus alternating the two as necessary to produce an even anesthesia, which may be accomplished satisfactorily and with graduated dosage."

"In the light of our experience," he says, "intravenous anesthesia is a method which, provided the indications are properly observed, is superior to any other form of general anesthesia in a large number of cases. For many conditions it is to be regarded as absolutely ideal, for aside from the fact that a small quantity of anesthetic is required, it has distinctly stimulating effects, which cannot be said of any other method known up to the present time."

Without doubt this is all true, and the method all Dr. Kummel claims for it, yet it lacks much of being one that can be recommended for general use, even in hospital work.

Dr. McGrath of the Mayo Clinic says, "The indications for the intravenous administration of anesthetics seem at present to be very limited, although time and research may radically alter this view."

Spinal anesthesia which, twelve years ago was taken up so enthusiastically in this country, and which, owing to faulty technique and an insufficient knowledge of the comparative specific gravity between the spinal fluid and the solutions used, was so soon dropped, has been revived, and

with improved technique has undoubtedly come to stay, but at present its use is limited, for its use for work above the abdomen is attended by much risk, it being necessary to prevent the injected fluid from reaching the medulla in order to prevent respiratory paralysis. This is done by injecting the fluid into the lower segments of the spinal canal at about the third or fourth intervertebral space and by being careful that the patient is not lowered too rapidly from the upright position nor the fluid injected too rapidly.

The success of the method depends upon the minutest detail of the technique. The contraindications are principally that the operator is committed to his dose, and in prolonged operations the anesthesia may not last out the operation. In a certain proportion of cases, spinal injection fails to produce the necessary analgesia.

Dr. Wayne W. Babcock of Philadelphia concludes in a recent number of the *Journal of the A. M. Association*: "Spinal anesthesia is not an universal anesthesia. Even if skillfully administered, it is probably more dangerous than a light narcosis under ether or gas-oxygen, but safer than a prolonged narcosis with complete relaxation under ether or gas-oxygen. All the newer methods should have their use restricted to selected patients by those who are properly qualified anesthetists."

I have thus hastily reviewed the most talked-of methods of anesthesia, having been able to merely touch upon their more prominent features, and without doing justice to any of them on account of the large amount of literature and the restricted limits of this paper. Much more might be said in favor of each and much more remains to be proven of each before we can be sure of its status.

Now what do we learn from it all? It seems to me that from even this hurried review there is one thing that stands out from among the many, and that is that in ether we still have our safest and best anesthetic, and the one that may be used with the fewest restrictions and simplest forms of apparatus.

Dr. McGrath, of the Mayo Clinic, whom I have already quoted, closes his introductory remarks by saying: "In making a wide survey of the field of surgical achievements, including statistical history, supplemented by the opinions of keen and progressive observers, no one method of application of general anesthesia is so soundly

supported by time and experience as ether, administered by an expert with a due allowance of air to the patient."

But when we have admitted that ether is at present our best and safest anesthetic, there is still another side of the subject to be considered. What are the remote effects of ether, and how may we best safeguard the future well-being of our patients?

Dr. Crile says: "Against ether stand certain ill effects, objectionable always, but of peculiar danger to the patient with hypertension. However skillfully administered it always induces a period of psychic stress in the earlier stages of its administration. The dose of ether required to dissolve the lipoid in the brain sufficiently to produce anesthesia dissolves also the lipoids of the liver, the kidneys, the red corpuscles and other important structures. Ether also chemically hinders or inhibits phagocytosis, hence it may induce nephritis or pneumonia. Ether immediately impairs the immunity of the patient so that infections find a ready recipient."

"I have therefore," he continues, "made nitrous oxide the anesthetic of choice, because it is devoid of harmful after results, and serves as a measurable protection against shock, since by its hindrance to oxidation it diminishes brain cell changes, a fact which I have established experimentally. It is an expensive anesthetic, however, and should be given only by a specially trained and skillful anesthetist, objections which can have no weight as compared to the resultant advantages to the patient derived from its use."

Dr. Crile is here speaking of gas-oxygen anesthesia, which he has done so much to introduce, and his remarks as to the comparative safety of nitrous oxide gas both as to immediate and after effects may serve to introduce the conclusion of my subject, which I can only approach with confidence when I reiterate that my conclusions are based upon the experience of well known surgeons and anesthetists who have faced the same problem which confronts us, namely, how can we use ether most scientifically and pleasantly to our patients, thus minimizing shocks and post-operative changes in the system?

We must all agree that the less ether that need be used, the better, also that more ether is commonly used during the stage of induction than afterward, and that more psychic stress and therefore more shock is produced during this period than during the complete anesthesia.

How can we improve upon the ordinary method of saturating the patient with ether during induction? The Mayo Clinic has perfected the so-called "drop method," and, by means of having carefully trained anesthetists, who have each done their thousands of cases, they have arrived at results which give them good satisfaction, though they are continually trying out new methods, and Dr. McGrath, who has undertaken a scientific and comprehensive comparative study of the newer methods, states in a recent article, that "each has enthusiastic advocates," and asks, "but which can withstand the test of time?" which I judge well represents the feeling of those who are giving study to the subject of anesthetics.

He continues, "The comparative merits of the anesthetics more recently advanced, and methods of administering them, are at present and for some time to come must remain in the balance. By the scientific advancement of local anesthesia, we may hope to see the number of cases requiring general anesthesia reduced to the minimum. Finally, praiseworthy and seemingly progressive as are the various endeavors which are being made in the application of the new general anesthetics and methods, nevertheless, it appears that one of the most essential steps, if not indeed the *most* essential step towards placing the question of anesthesia upon an efficient basis, is the training and encouragement of the skilled anesthetist."

It may be conceded that any method which has found general favor with leading surgeons and anesthetists in a great center like New York, and has continued steadily in use, both in hospital and private work as the method of choice, must have merit entitling it to the respectful attention of all.

I found this to be the case with nitrous-oxide-ether sequence. Except for some few operations it is the method of choice for all general work at the Post-Graduate Hospital, and there I saw it used in case after case for the greater part of two days, many being operated at the same time in different rooms, both on house and private cases.

Dr. Bennett, inventor of the gas-ether apparatus bearing his name, uses nothing else, and his practice is probably the longest of any professional anesthetist in the city. In head and thorax cases he uses gas-ether for induction, then changes to ether vapor forced through warm

water and carried by means of a tube into the nose or mouth.

Through the courtesy of the house surgeon at the Post-Graduate, arrangements were made and a series of cases were shown me under gas-oxygen given by the head anesthetist, and I came away impressed with the feeling that they had good reasons for relying chiefly upon the gas-ether rather than gas-oxygen.

With the nitrous-oxide-ether method a few whiffs of gas and the dreaded primary stage is over, then the anesthesia may be carried on with ether as Dr. Bennett prefers, with the "closed method" throughout, or by the "drop method" upon the open mask as the Mayo Clinic uses it. There have been objections to the "closed method" on account of the rebreathing, but I feel sure that this is merely because of the "idea of the thing," so to speak, rather than because there is any real basis of harm in it.

Surely were it found harmful, men who represent progressive surgery in New York and elsewhere, as well as professional anesthetists like Bennett, Gwathmey, Coburn, Connell, Sanders and others would not endorse it. What does occur except the rebreathing of carbon dioxide, which is known to be the very best respiratory stimulant we have?

I think too that the objectors have an idea that no fresh air at all is admitted, but this is only true until the induction stage is passed, when a continuous stream of fresh air is introduced into the ether chamber, and there should never be seen any cyanosis except such as might occur in *any* straight ether case.

All the men whom I saw doing throat work and all cases of mastoid disease, goitre, dissections of cervical glands and mammary tumors are done by use of gas-ether induction followed by the warmed ether-vapor mentioned above.

For this, a three bottle apparatus is used, one bottle containing ether, one chloroform and one warm water. A foot pump forces the vapor through the warm water, thus at once warming and purifying it. It is then conveyed through a tube into the nares or mouth as before described.

For those who prefer ether straight upon the open mask, Dr. Gwathmey's invention of the use of a 25% solution of oil of orange in alcohol, a few drops upon the mask, is recommended as doing away almost wholly with the pungent, ir-

ritating effects of the ether fumes, and thus preventing much of the psychic stress incident to the induction stage of anesthesia.

Dr. Gwathmey also uses this in the water bottle used with the vapor method just mentioned, using the vapor both for induction and thereafter.

However, the open method has the great disadvantage that the air taken into the lungs is chilled, and how *much* chilled one may discover by holding a metal cone in the bare hand for a short time.

This refrigerant effect is known to be harmful and the bodily temperature is decidedly lowered at a time when the system, already suffering from shock, is poorly prepared to withstand it.

It is estimated that with the use of unwarmed ether vapor there is abstracted 21,000 calories of body heat for each ounce of ether used. Many of the fatalities in tonsil-adenoid operations are due to this fact. This may be obviated by use of the closed inhaler, or by passing the vapor through warm water.

In the gas-ether sequence a minimum amount of ether is used, owing to the fact that less ether vapor is necessary to produce the required tension. During induction a 30 percent tension is required, while later a 15 per cent. tension will maintain even anesthesia. These two facts explain in part why the gas-ether induction—doing away with the large amount of ether necessary to secure a 30% tension, and the fact that the required tension is more easily maintained by warm vapor—requires less ether for an operation than is used in other methods. A one-quarter pound can of ether is sufficient for an operation lasting two hours.

This small amount, spread out over two hours of administration, has its significance for an operation lasting two hours when we realize that the same amount crowded upon the patient during induction, which is a not infrequent occurrence, means that the tension is high and that damage is being done to different important structures of the body. Nor is that all, for ether in this concentrated form is largely responsible for a certain amount of shock, partly due to the ether tension itself, partly to the psychic stress that Dr. Crile mentions as pertaining to the straight ether induction.

In conclusion I think we may safely say that:

1st. While the newer anesthetics and methods have their value in selected cases, we still have

in ether the safest and most generally useful anesthetic.

2nd. It may best be administered in one of these forms:

(a) Gas-ether induction, followed by ether on open mask, or by the closed method.

(b) Ether vapor warmed for general work, but more especially for operations about the head and thorax.

(c) The open or drop method with the addition of oil of orange.

3d. In some form of local anesthetic lies our greatest hope for something better than ether.

Rutland, Vt.

THE EYES OF SCHOOL CHILDREN.*

BY

LOUIS W. FLANDERS, M. D.

In order to study intelligently the refractive errors of school children, let us review for a moment some of the principal aberrations from the normal, their symptoms and causes.

Myopia, or near-sight, exists in an eyeball which is too long, thereby causing rays to come to a focus before reaching the retina. Hyperopia, or far-sight, is the opposite condition; the eyeball in this case being too short, so that the focal point falls behind the retina. Astigmatism, an extremely difficult condition to explain without suitable demonstration apparatus, may be said to be due to faulty curvatures in one or more meridians of the cornea or lens.

All these conditions can be corrected partially, sometimes fully, by an effort of accommodation, thereby rendering the lens of the eye thicker or thinner as the case may require; but this "accommodating" as it is called, is attended by more or less pain in the eyeballs, together with frontal and occipital headache. We shall understand this better if we illustrate by a concrete example. For instance: It is quite possible for any of us to hold the arm out straight for five minutes; but if we attempt to hold out a small weight in the hand for the same length of time, the effort is attended with aching and cramp. In like manner, it is possible for us to keep the muscle of accommodation in a state of contraction for an hour or two at a time, thereby enabling us to use the

eyes at short range for reading or studying; but if we add to this effort the burden of overcoming astigmatism or hyperopia, the exercise becomes distinctly fatiguing. Myopes and some cases of astigmatism can clear the vision somewhat by half closing the eyes, the lids in this case acting like the stenopeic slit in shutting out faulty curvatures.

The myope and the child with a high degree of astigmatism may not complain of nervous symptoms. They simply cannot see at a distance, and the teacher seats them in front in order that they may read from the blackboard. The hypermetrope and the cases of slight astigmatism complain of frontal headache, pain and smarting in the eyeballs, occipital ache and a whole train of resulting nervous symptoms, sometimes surprisingly remote from the eyes.

I suppose we must admit that occasionally a child is born with a misshapen eyeball, but by far the greater number of refractive errors are acquired. This is especially true of near-sight and astigmatism, and I am firm in the conviction that acquired errors of refraction in school children are due to faulty lighting, faulty seating and improperly printed text-books. We have known for years that to maintain health in the school, the pupils must be properly seated; that they must have sufficient light coming from the right direction; that the air they breathe must be pure—and yet, how often do we see all these laws violated in the school-room! Are chairs and desks adjusted to the individual child? and if they are, how much of the day does he occupy them? Is he not travelling from room to room and for considerable periods of time sitting at a desk adjusted to someone else? Is the school-room adequately lighted in the daytime? Are the pupil's eyes subjected to the glare of the electric light filament or reflections from polished surfaces? Are the ventilators working? and if so, which way? backwards or forwards? These are not fanciful questions. Within a few months an intelligent woman described to me a school-house, built within two years, in which the architect had violated three conditions necessary to the safety of the eyes while as for light—the afternoon session was supposed to continue until four o'clock, but it was necessary to dismiss the school at half past three in the winter because the scholars could no longer see to study.

In the last few years we have made quite a little advance along the lines of better hygienic

*A paper read before the Dover Medical Society at the December meeting for 1912.

conditions in the schools. In almost every town an examination of the eyes of the pupils is conducted by the teacher. That this examination must be incomplete goes without saying, since it is conducted by one unskilled in optics. It is wholly a test-card examination. If the child is able to read letters of a proper size at twenty feet, that is, if his vision can be recorded as twenty-twentieths, he is passed as having normal vision. This method weeds out myopes and cases of marked astigmatism, and is, therefore, valuable as far as it goes; but it wholly fails to detect slight degrees of astigmatism or even high degrees of hyperopia.

Allow me to cite a case in point.

A. B. was brought to my office for examination. The mother testified that the teacher said that the boy's eyes were all right, but that the family physician, judging from the symptoms in the case, insisted that there must be something wrong with them. Subjective examination showed the vision in the right eye to be twenty-twentieths plus; vision in the left eye twenty-twentieths minus. If we depended upon the test-card alone we might, therefore, pass the child as having practically normal vision. A careful examination with instruments of precision developed the following refractive error.

Right eye, S + .50 + C + .25 Ax 180.

Left eye, S + .50 + C + .50 Ax. 30.

Here, then, was a case of concealed compound far-sighted astigmatism, and glasses gave immediate relief from all headache and nervous symptoms.

It is quite common for the oculist to find cases of simple hyperopia who can read perfectly the normal test-type at twenty feet, and yet require glasses as strong as a person sixty-five years old would wear in order to relieve the muscle of accommodation.

That a vision of twenty-twentieths is the *sine qua non* of school examiners is illustrated by the following case.

C. D. had an uncorrected vision of twenty-fortieths in the right eye, and twenty-sixtieths in the left. Illumination of the corneas showed evidences of sore eyes in infancy with consequent opacities and irregular curvatures. Glasses which afforded partial relief were prescribed, but the boy was returned in a day or two with a message from the teacher to the effect "that his glasses did not fit inasmuch as he could see no better than before."

In citing these two cases I wish it to be distinctly understood that I am not criticizing the teachers. They are working conscientiously so far as their knowledge goes, and detect a great many cases of eye-strain that would have passed unnoticed under the old regime. Nor do I think an examination by the school physician would be any more efficient unless he had devoted much time to the study of refraction. Dr. Myles Standish, in discussing the question "Should the examination of school children be conducted by the teacher or the school physician?" says, "It will be obvious, I believe, that the teacher's report on the eyes may be of much more service to the child than a hasty examination by the physician." He concludes the paper with these words: "From an oculist's point of view, however, it is plain that the practical result of the examination by the teachers is efficient and leads up to proper care of the children's eyes." I cannot agree with him in this conclusion. It is possible that examinations conducted in large cities have been brought to a higher degree of efficiency than in smaller towns, but for a rough estimate, I should say that the tests conducted in this vicinity leave thirty per cent. of all errors undetected.

What can we do to improve existing conditions? The ideal way, of course, would be to have all examinations conducted by an expert; but this would take so much time and entail so much expense that it is clearly impossible in our present stage of advancement. Under the circumstances, there seems to be no better way than to bring the teachers up to a higher degree of efficiency. Here again, the doctor must sacrifice himself and delegate a part of his work and of his income to a layman. Let us form the teachers into classes and give them instruction in some of the principles of optics, and impress upon them the common symptoms arising from errors of refraction. Let them understand that a vision of twenty-twentieths is not to be taken as conclusive proof that an eye is normal; that headache low down over the brows or in the back of the head; smarting and burning and ache in the eye-balls; twitchings and scowlings and abnormal positions for holding the book—are all evidences of eye-strain, no matter what the vision may be.

Let us see to it that parents understand that incipient near-sightedness increases rapidly unless it is corrected, that faulty seating, faulty lighting and text-books deviating from established lines of printing, may be at the bottom of

many eye-troubles. If the mother complains that her daughter is round-shouldered, or carries one shoulder higher than the other, or is developing a slight spinal curvature, let her be sure that the child's school desk is not too high, or the chair in which she sits too far away from the desk.

We have harnessed for our use a source of illumination almost rivalling the sun in brilliancy, but unfortunately we have not as yet learned how to block electrical rays so that they shall be efficient and yet work no injury to the eyes. Improvements are coming every day, yes, every hour. A multiplicity of shades, lamps and diffusion apparatus are already on the market. Do we know about them? An evening in the opera house wearies many eyes. Why?

It is from the pockets of tax-payers that money for all improvements must come. Let us see that they understand the crying necessity for such improvements, and then if they withhold the funds, we can at least rest with clear consciences.

Dover, N. H., Nov. 19th, 1912.

THE PRESERVATION OF MILK BY DRYING.

In the attempt to furnish milk to the consumer in a form free from the objections which hygienic considerations are yearly interposing in greater degree, one of the chief stumbling-blocks lies in the necessity of keeping the milk fresh between the time of milking and of delivery. The problem of the modes of preservation, involving the questions of the application of heat to the raw product, the use of chemical preservatives, or the subjection to low temperature, has given rise to some acrimonious debate and has been the occasion for not a little legislation attempting to regulate the practices concerned. All of the proposed modes of preserving milk in transit have serious limitations in respect either to effectiveness or to expediency and cost. In view of this it seems strange, says *The Journal of the American Medical Association*, that greater effort has not been devoted to perfecting some more suitable plan, in particular the obviously promising scheme of desiccating milk.

The concentration of milk by evaporation was attempted more than a century ago. The first really practical method was devised by Gail Borden. Acting on a suggestion made by Horsford, he successfully evaporated milk, and in 1856 obtained a patent for his process of preparing "con-

densed" milk, as it was subsequently termed. The lack of legal restrictions soon permitted the use of nutritively inferior grades of milk in the production of condensed milk, so that for many years poor qualities prepared from skimmed milk were freely sold to the ignorant customer. From the point of view of the danger of milk as a source of infection, there are probably advantages in condensed milk. Delépine is said to have proved conclusively that tubercle bacilli are invariably killed by evaporation. The chief objection to condensed milk has been its misuse in infant-feeding. There is a strong belief that children fed on condensed milk are less resistant to the encroachments of disease than those brought up on fresh milk. Furthermore, condensed milk will deteriorate like fresh milk if it is diluted and is then exposed to the chance of bacterial contamination.

Since the early years of the present century attempts have been made to carry the desiccation of milk still further. The presence of fat has interposed the greatest difficulty to the complete drying of milk. Three successful processes for the manufacture of dried milk are in actual use. All of them are protected by general and subsidiary patents which make it difficult as yet to assign a universally recognized name to the procedures. The chief objection to most of the material prepared in this way lies in the less agreeable flavor of the dried product. This can probably be improved. Desiccated milks have already begun to receive attention in infant-feeding. This is the severest test to which it can be put. Economy, cleanliness, convenience and hygienic considerations all suggest that high grades of dried milk are entitled to careful investigation for the possibilities which they present. A study of the markets show that they have already made an inroad into the culinary departments of many institutions and homes.

ETHER PNEUMONIA.

Two of our acquaintances, both well up in years, have recently died of ether pneumonia following successful minor operations. There is too much minor surgery done upon old people—minor operations that, so far as shock is concerned, are really major ones in the aged. It were well to advise our middle-aged patients not to neglect necessary surgical attention. When surgery must be done upon an aged subject, it is well to resort to local anesthesia wherever practicable.—*Medical Council*.

Vermont Medical Monthly.

A Journal of Review, Reform and Progress in the Medical Sciences.

H. C. TINKHAM, M. D., }
B. H. STONE, M. D., } *Editors.*

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BURLINGTON, VT., MARCH 15, 1914.

EDITORIAL.

In reaching their conclusions and making their recommendations for educational reform in Vermont, the Carnegie Foundation has had in view the economical goal of turning out the educated product at the least expenditure of money and they have followed the well-known efficiency principal of centralization. If we look at the matter from this angle, their conclusions are probably sane, but can we from the broader point of view of the common weal, apply the same commercial and industrial tenets which produce the Standard Oil Company to matters of education? It seems to us that there is an element in the situation, which has been absolutely missed. Education maintained by the State is for the public welfare—the general good of all. And this benefit is not obtained through the educated student alone, but by the general elevating influence of the school on the community in which it exists. The country school has always been a veritable beacon of light and equally with the country church has emanated this radiance to the community. That the influence of the many school children and teachers has been of

tremendous value to our country homes and communities no one who is familiar with the conditions can doubt. The old lyceum though somewhat fallen into disrepute lately would never have existed at all without the country school. The public school exercises bringing the parents together, the presence of the school child in the home, and finally the example of the teacher in the community, have all exerted a great leavening power. And right here is a factor of great importance which has apparently been overlooked. For about every twenty-five students there is one teacher, usually some ambitious girl or boy from the immediate locality who by living at home, can afford to teach the country school at the small salary paid. The training in self-reliance and discipline gained by this teacher is no small part of the educational value of the school and the ambition stimulated in the minds of the children by the sight of this teacher—one from their own midst, occupying a somewhat exalted position—has been a potent influence for good. Many indeed of the successful men of the present made their real start in life as teachers in the country school. The high intellectual average of New England country life is largely due to these very influences. Any one can already see if he cares to look the blighting effect on the smaller community of the loss of the school. These principles carried to their logical conclusion as recommended will practically eliminate the school from the smaller communities and if applied to them, it would do away with the country churches as well. One of the marked features of modern industrial and social life is certainly this tendency toward centralization. It is a part of the price which the country has to pay for the attractions of modern city life. But after all the rural community is and will continue to be the backbone of our nation, and Vermont which is essentially rural, should be careful not to voluntarily take any steps which will hasten the current which carried to the extreme advocated in the Carnegie Report would go far toward wiping Vermont, as an intellectual factor of impor-

tance, from the map. On the same principle the foundation advises the abolition of medical teaching from all northern New England. Just as surely as the small school diffuses an uplifting influence to the surrounding country, so truly does a medical institution radiate its inspiration to the medical men within its sphere. The farther away from this emanating center the poorer in general will be the grade of medical practitioners. Not only will the small towns be unable to obtain physicians but those who do settle here will be poorer doctors. This effect will not be seen immediately but it will come just as surely as the sun rises in the east. When our young men go to the larger centers to acquire their education, at a much greater cost, fewer and fewer of them will be content to come back to the rural communities and those who do come will be those who are unable to make a success in the larger cities. In other words the culls. Education in the big cities may possibly work to the financial benefit of a few although this we doubt, but it inevitably means the decadence of medicine in Vermont. Can Vermont afford this at any price? We believe that the common sense of the people can give only one reply to this question.

FEWER MEDICAL SCHOOLS.

"There are 14 fewer medical schools in the United States than there were a year ago; 1,200 fewer persons studied medicine in 1913 than in 1912; and there was a decrease of 500 in the number of medical graduates, according to figures compiled at the United States Bureau of Education.

The reduction in the number of medical schools is part of a steady movement for improved medical education that has been going on for the past 8 or 9 years. The American Medical Association, the various State medical societies, and other agencies, have aroused public opinion to such an extent that 79 medical colleges have either merged with other institutions or ceased to exist, and the standard of medical training has

been raised considerably. Of the 101 medical schools now listed at the Bureau, 53 are requiring one or more years of college work as a prerequisite to entering upon the study of medicine. State examining boards in North Dakota, Iowa, Minnesota, Colorado, Indiana, South Dakota, and Kentucky have introduced regulations, in most cases to be made effective within a year or two, providing that every applicant for a license to practice medicine shall have studied two years in college, after a four-years' high school course, before even beginning medical training. A similar requirement covering one year of college work will soon be enforced by the State boards of Connecticut, Kansas, Utah, Vermont, Pennsylvania, and California.

An interesting feature of the statistics is the part played by women. Although the total number of medical students has decreased, the number of women studying medicine has increased. In 1912 there were 18,451 medical students, of whom 712 were women; in 1913 there were 17,238 students, of whom 835 were women. Only 70 women graduated this year, however, as compared with 142 in 1912."

In June, 1914, there will be only ninety medical schools in the country, a number going out of existence with this commencement. There were one hundred and twenty when the Flexner report was issued by the Carnegie Foundation four years ago. This shows the rapidity with which the elimination has been carried on toward the goal of sixty schools set by that report. This result has been accomplished by a system of increased standards set and maintained by the Council of Medical Education of the American Medical Association, the Federation of Examining and Licensing Board and the Association of American Medical Colleges. The standards in some particulars have been adopted with the distinct purpose of eliminating undesirable schools and consequently some of them are arbitrary and not altogether rational. During the time and in consequence of the policy the number of standards have steadily decreased as indicated by the

above newspaper clipping. It is to be hoped that this decrease has gone to its low ebb. It is to be hoped as the scarcity of medical graduates is being felt acutely in some rural communities already.

THE DISCOVERY OF CHLOROFORM.

Perhaps the last remaining link with the history of the discovery of chloroform anesthesia has been broken by the death of Mrs. Agnes Thompson, who passed away at Streatham the other day, at the age of 82. She was a niece of Sir James Simpson, and was present at his house on the evening when the first experiment was made. An account of the scene is given by Miss Eve Blantyre Simpson in her life of her father in the famous Scots Series. Simpson and his assistants, Matthews Duncan and George Keith, tried it on themselves. Keith was the first to inhale it, and the others, on seeing the effects on him, and hearing his approval before he went quite "under," both took a dose. Soon they were all more or less under the table together, much to the alarm of the ladies of Simpson's family. When he was recovering, Simpson said to himself, "This is far stronger and better than ether." Duncan was snoring heavily while Keith was kicking violently at the table above him. Among those present were Mrs. (afterwards Lady) Simpson, her sister Miss Grindlay, her niece Miss Petrie, and her brother-in-law Captain Petrie. Several further trials were made. Miss Petrie the lady who has recently died, offered herself for experiment, and when falling asleep under the influence of the drug she remarked, "I am an angel, a beautiful angel; how are you all down there?" On the other hand Keith's expression was so ghastly that he frightened the ladies. Of Matthews Duncan it is related that, after he had with difficulty been got to bed, he came out on the landing and shouted "Give a roar, Duncan!" and proceeded to do so with such effect that he scared everybody in the house. Simpson, as is known, tried many things as anesthetics, and chloroform was suggested to him as a likely agent by Mr. David Waldie, then connected with the Apothecaries' Company at Liverpool. Waldie promised to procure the drug for Simpson, but, as he says, other engagements and various im-

pediments prevented his doing so as soon as he would have wished, and in the meantime Simpson got some from Duncan and Flockhart of Edinburgh. With this he forthwith proceeded to experiment, and the results were communicated to the Medico-Chirurgical Society of Edinburgh on Nov. 10th. Mr. Alexander Spence, a dispensing chemist of Leslie in Fife, has sent us an extract from the *Statesman and Friend of India* of November 10th, 1913, in which it is stated that a brass tablet commemorating Mr. Waldie and his association with the discovery of the anesthetic properties of chloroform was put up in the rooms of the Asiatic Society of Bengal on the previous evening. Mr. Waldie went to Calcutta in 1853, became the pioneer of chemical manufacturers in India. Mr. Spence states that a bronze portrait medallion is to be placed on the house in Linlithgow where Mr. Waldie lived for some time.—From *British Medical Journal*, Jan. 17, 1914.

The sixth annual report of the Vermont Sanatorium has just been issued, the report of the director, Dr. E. J. Rogers, is in part as follows:

During the year 1913, there were 110 applications filed, and of this number 78 were admitted; 18 were rejected on account of unfavorable condition; and 14 did not report to our local examiners for completion of their papers. The number of admissions was 78 against 66 in 1912, and 93 in 1911. Unfortunately, many applications are for cases classed as far advanced, unfavorable, and without reasonable hope of improvement and it is impracticable to take them. The attention of the trustees is most earnestly called to this fact with the hope that they may meet and explain the criticism which is frequently aimed at the Sanatorium for refusing to admit these far advanced and unfavorable cases. If these cases are admitted, it will necessitate the employment of a much larger nursing force, and in a very short period of time all rooms would be taken up by bed cases, forcing out the earlier and curable types.

The average number of patients per day was 33.37 or 12,182 patients' days against 11,389 in 1912 and 12,973 in 1911. The average length of stay of the cases discharged during 1913 was 191 days as against 136 days in 1912 and 141 days in 1911. This average was increased perceptibly by the long residence of several patients who had

been at the Sanatorium for periods exceeding one year, all of whom were discharged during the year.

Your attention is called to the classification of cases on admission:

	1913	1912	1911
Incipient	16 or 21%	18 or 27%	23 or 25%
Mod. Adv.	52 " 67%	41 " 62%	70 " 75%
Far Adv.	7 " 9%	6 " 10%	.....
Enteritis	1 " 1%	.....	.....
Osteitis	1 " 1%	.....	.....
Non-tubercular	1 " 1%	1 " 1%	.....
Total	78 " 100%	66 " 100%	93 " 100%

It will be noted in the following table of discharged patients that a new classification is used. In place of the old classification "apparently cured" we now use "apparently arrested"; and in the place of the old classification of "arrested" we now use the term "quiescent."

	1913	1912	1911
Apparently arrested	2 or 3%	4 or 5%	13 or 15%
Quiescent	17 " 24%	26 " 32%	24 " 28%
Improved	30 " 42%	33 " 41%	31 " 36%
Unimproved	21 " 30%	17 " 21%	17 " 20%
Died	1 " 1%	1 " 1%	1 " 1%
	71 " 100%	81 " 100%	86 " 100%

While these percentages are somewhat disappointing, it must be remembered that each year the number of incipient cases admitted has perceptibly decreased while the number of far advanced and unfavorable cases has increased. One of our examiners in a large city has said that the incipient cases do not seem to present themselves for examination as they did in former years; that the medical men of Vermont were themselves recognizing the disease earlier and were probably forestalling the disease by rest and nourishment. The same observer testified to the good influence which many of the returned patients exerted in their homes and neighborhood by bringing about improved sanitary and hygienic conditions.

A study of the weights shows that a large number of patients, 47 in all, gained an average of 10.81 lbs. each, while 17 lost an average of 7.78 lbs. The age table shows that about 50% of the patients discharged during 1913 entered the Sanatorium between the ages of 21 and 30 inclusive. This is a most striking fact, as it shows that patients break down at the age of greatest development, just when the mental and physical strain seems to be greatest in both sexes. In civil or

marital conditions the patients are about equally divided, there being 34 married, 1 widowed, and 36 single. As to sex, there were more women than men, the proportion being 42 to 29. The occupation table shows that the greatest number comes under the head of housewife, while granite cutter is next. Residence, as usual, shows that Washington County leads, and it is very interesting to know that, while 7 men were connected with the granite industry, the 8th man was a farm laborer, and that the remaining six were women distributed under the head of teacher, housewife, student, newspaper worker, home life, and milliner.

During the past year no material change has been made in the treatment of patients. Very little medicine has been used, and that only in a symptomatic way, and occasionally some tonic treatment. In the matter of diet, it is found that most of the patients come to the Sanatorium under the impression that they must stuff themselves on all classes of food, especially milk and eggs. While all admit the value of milk and eggs in the matter of forced feeding, it should be remembered that tuberculosis is a long standing disease requiring weeks and months of treatment, and the dietary must necessarily be arranged for a long period rather than for transient gains in weight.

A Robinson pneumothorax apparatus has been added to the medical equipment and suitable cases will be treated by the compression of the lung with nitrogen gas.

During the coming year it is hoped that more attention can be given to graduated labor as a therapeutic agency. This has worked out satisfactorily in other sanatoria and has a distinct curative value besides being very valuable as a matter of discipline and entertainment. At present exercise consists almost entirely of walking, with some little work done in the matter of making beds, sweeping porches, caring for rooms, etc. There are many ways in which patients might help in cutting down expenses, but it is next to impossible to maintain any interest on their part without constant supervision.

Discipline of the patients has been unusually good, but it was found advisable to ask two patients to withdraw, owing to some flagrant violation of the rules.

Three or four children have been cared for with very satisfactory results from a medical stand-

point, and with practically no trouble from a standpoint of discipline. A great deal depends on the individual child and if it is disposed to be troublesome, it will call for more attention and supervision than an adult case.

Twenty-five cases have been cared for by the state under an appropriation elsewhere referred to. Nine of these have been discharged, and at present there are 16 cases being paid for by the State of Vermont at \$7.50 per week. These cases are put on exactly the same footing as private cases and no discrimination is made in the matter of admission. Attention is again called to the fact that these cases must be examined by our local examiners before the Sanatorium will accept them for admission.

NEWS ITEMS.

Dr. C. W. Strobell of Rutland, Vermont, has sold his real estate and general practice and moved to New York City. The doctor will be located in the professional building at Madison Ave. and 38th Streets. His specialty will be surgery and diseases of women. Dr. Strobell has practiced in Rutland since 1890 and was at Middletown Springs for eight years previous to his locating in Rutland. He has been attending surgeon at the Rutland City Hospital since its organization.

Dr. and Mrs. George H. Buxton of Ludlow, Vermont, are the parents of a baby girl.

Dr. and Mrs. Barnet Joseph, formerly of Burlington, now of New York City, are the parents of a daughter born the 28th day of January.

Mrs. D. C. Pierce, wife of Dr. Pierce of Ludlow, died recently.

Dr. H. L. Frost and Miss Christine Gulick were married on Feb. 14 in Charlotte. Dr. Frost is located in Pittsford, Vermont.

Dr. Charles R. Gibson of Woodsville, N. H., is recovering nicely from his recent attack of sickness and is now out. Dr. F. E. Spear of Lisbon, N. H., is now associated with Dr. Gibson in practice.

Dr. H. H. Lee of Wells River, Vt., who has been ill for some months continues about the same.

Dr. A. B. Bisbee of Montpelier, Vt., is spending the late winter months in North Carolina.

Dr. Horace E. Marion, aged 70 years, of Brighton, Mass., died suddenly in his automobile on February 8th. The doctor was a graduate of Dartmouth, class of 1866, and also from the medical department in 1869.

Quarterly meeting of Rutland County Medical and Surgical Society was held at the Berwick Hotel, Tuesday, January 13, 1914, at 11 a. m., with the following program:

Reports and new business.

Conservative Surgery of the Ovaries, C. W. Strobell.

Modern Anesthesia, E. I. Hall.

Expert Evidence, B. L. Stafford, State's Attorney.

Demonstration of Lungmotor, M. R. Crain.

O. C. Baker, President; F. H. Gebhardt, Secretary.

The program of the St. Albans Clinical Society. St. Albans, Vt., season of 1913-14.

PROGRAM.

Oct. 13th, 1913, Dr. J. G. Perrault.

Subject, "Neuritis."

Discussion opened by Dr. Paige.

Current Medical Literature, Dr. Upton.

Nov. 3rd, 1913, Dr. E. J. Melville.

Subject, "Huntingdon's Chorea."

Discussion opened by Dr. Upton.

Current Medical Literature, Dr. Morton.

Dec. 1st, 1913, Dr. Alan Davidson.

Subject, "Procidentia Uteri, its causes. The treatment before and after the climacteric."

Discussion opened by Dr. Gibson.

Current Medical Literature, Dr. Wright.

Jan. 12th, 1914, Dr. John Gibson.

Subject, "Obstetrical Aftermaths."

Discussion opened by Dr. Davidson.

Current Medical Literature, Dr. Norris.

Feb. 2, 1914, Dr. W. B. Arnold.

Subject, "Pain."

Discussion opened by Dr. Hyatt.

Current Medical Literature, Dr. Gibson.

March 2, 1914, Dr. S. W. Paige.

Subject, "Typhoid Fever."

Discussion opened by Dr. Wright.

Current Medical Literature, Dr. Arnold.

April 6, 1914, Dr. A. O. Morton.
Subject, "Diseases of the Tonsils and Treatment."

Discussion opened by Dr. Norris.

Current Medical Literature, Dr. Hyatt.

May 4, 1914, Dr. E. A. Hyatt.
Subject, "New uses and ideas of a few old drugs."

Discussion opened by Dr. Arnold.

Current Medical Literature, Dr. Melville.

June 1, 1914, Dr. W. H. Wright.
Subject. To be announced.

Discussion opened by Dr. Melville.

Current Medical Literature, Dr. Perrault.

July 6, 1914, Dr. W. J. Upton.
Subject. To be announced.

Discussion opened by Dr. Morton.

Current Medical Literature, Dr. Davidson.

The tenth annual conference of the American Medical Association on Medical Legislation and Medical Education met at the Congress Hotel, Chicago, February 23 and 24, with the following program:

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION.

Chairman, Henry B. Favill, M. D., Professor of Clinical Medicine, Rush Medical College, Chicago.

W. C. Woodward, M. D., Health Officer, District of Columbia, Washington, D. C.

H. M. Bracken, M. D., Secretary, Minnesota State Board of Health, St. Paul, Minn.

Walter B. Cannon, M. D., Professor of Physiology, Medical School of Harvard University, Harvard University, Cambridge, Mass.

Watson S. Rankin, Secretary, North Carolina State Board of Health, Raleigh, N. C.

Secretary, Frederick R. Green, M. D., 535 North Dearborn St., Chicago.

COUNCIL ON MEDICAL EDUCATION.

Chairman, Arthur Dean Bevan, M. D., Professor of Surgery, Rush Medical College, 122 South Michigan Ave., Chicago.

James W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College, 2006 Chestnut St., Philadelphia.

George Dock, M. D., Professor of Medicine, Washington University Medical School, St. Louis, Mo.

W. D. Haggard, M. D., Professor of Surgery and Clinical Surgery, Vanderbilt University Medical Department, 148 N. Eighth Ave., Nashville, Tenn.

Horace D. Arnold, M. D., Dean of the Harvard University Graduate Medical School, Boston, Mass.

Secretary, N. P. Colwell, M. D., 535 North Dearborn St., Chicago.

FIRST DAY PROGRAM.

Conference on Public Health and Legislation.
Monday, February 23.

MORNING SESSION, 9 A. M.

1. Call to order by Chairman, Dr. H. B. Favill, Chicago.
2. Opening of the Conference, by Dr. J. A. Witherspoon, President of the American Medical Association. Address—Public Education a Duty of the American Medical Association.
3. Report of the Secretary.
4. Presentation of Reports from different states.
5. Appointment of Committee on Resolutions.
6. Introduction of Resolutions, New Business, etc.
7. Reports of Committees.
 - (1) Committee on Railway Sanitation.
 - (2) Committee on Expert Testimony.
 - (3) Committee on Conservation of Vision.
 - (4) Committee on Public Health Education Among Women.
 - (5) Committee on Revision of the Owen Bill.

AFTERNOON SESSION, 2 P. M.

1. Recent Efforts for Sex Education. Dr. Wm. F. Snow, Secretary, American Social Hygiene Association, New York City.
2. Wisconsin's Experiment in Marriage Legislation. Dr. C. A. Harper, Secretary, State Board of Health, Madison, Wis.
3. Public Education Through the Daily Press. Dr. J. W. Pettit, Ottawa, Ill.
4. Public Education Through State and County Health Boards. Dr. W. S. Rankin, Secretary, State Board of Health, Raleigh, N. C.
5. Recent Attacks on Scientific Research. Dr. W. W. Keen, Philadelphia, Pa.

6. Sixty-Seven Years of Legislation. A Criticism and a Program. Dr. Frederick R. Green, Secretary, Council on Health and Public Instruction.

SECOND DAY PROGRAM.

Tenth Annual Conference on Medical Education.
Tuesday, February 24.

MORNING SESSION, 9 A. M.

1. Address by the Chairman, Dr. Arthur Dean Bevan, Chicago.
2. Report on the Work of the Year, by the Secretary, Dr. N. P. Colwell, Chicago.
3. "The Danger to the Maintenance of High Standards from Excessive Formalism," by President A. Lawrence Lowell, Harvard University, Cambridge, Mass.

Discussion—Hon. John N. Finley, LL. D., Commissioner of Education of the State of New York, Albany, N. Y.

Dr. Victor C. Vaughan, President-Elect of the American Medical Association, Ann Arbor, Mich.

4. "Administering the Year in Physics, Chemistry, Biology and a Modern Language," Dr. Richard H. Whitehead, Dean of the Medical Department of the University of Virginia, Charlottesville, Va.

Discussion—Dr. John L. Heffron, Dean, Syracuse University College of Medicine, Syracuse, N. Y.

AFTERNOON SESSION, 2 P. M.

5. "Hospitals and Their Relations to Medical Colleges and the Training of Interns," by Dr. Christian R. Holmes, Cincinnati, Ohio.
6. "Registration Under the Canada Medical Act," by Dr. R. W. Powell, Registrar of the Medical Council of Canada, Ottawa, Ont.
7. "Medical Licensure in the United States," by Dr. J. McPherson Scott, Secretary of the Maryland State Board of Medical Examiners, Hagerstown, Md.

In the Boston New Children's Hospital, diphtheria is now the least dreaded of all contagious diseases. It is practically absolutely controlled by immunizing doses of antitoxin given every child as a matter of routine at stated intervals.

Sir Arbuthnot Lane, Sir Rickman Godlee, and Dr. Herbert J. Patterson, three of England's

most distinguished surgeons, with their wives, visited the Mayo Clinic last month, spending several days. The surgeons gave addresses before the "Surgeons' Club."

Dr. F. W. Little, a dope-fiend of Sidney, Ia., who, last September, shot and seriously wounded his wife and another woman in a hotel at Mt. Ayr, Ia., pleaded guilty to the charge of assault with intent to commit murder and was sentenced to state prison for 30 years.

The establishment of a social service department at the Minneapolis City Hospital is under consideration by the Board of Charities and Correction. The financial condition of the family of every patient brought to the hospital will be investigated, and the family given assistance if necessary.

A cooperative agreement between the United States Bureau of Mines and the National Radium Institute, of which latter Dr. Howard A. Kelly is a director, has been arranged. It is the purpose in making this agreement to provide for the mining and refining of radium-bearing ores of Colorado and Utah.

Of the 100 counties of North Carolina, ten now have "whole time county health officers," paid salaries from \$1,800.00 to \$2,500.00 each. Recently a three days' conference of these officials was held in Raleigh with a view to better instruction in their duties and the promoting of uniformity in the several counties.

The Supreme Court of Colorado, in a recent decision, has nullified those provisions of the Colorado medical practice act which gave the State Board of Medical Examiners power to revoke a physician's license for guaranteeing to cure a manifestly incurable disease and for advertising the treatment of diseases of the sexual organs.

Several school trustees of the board of education, Toronto, are dissatisfied with the medical inspection of school children as carried out at present by the board of education, and will back the city council in its appeal to the Ontario government for special legislation to have the inspection done under the health department of the city.

It was announced at the American Mining Congress recently held in Philadelphia, that free radium clinics will be established in the near

future at Memorial Hospital, New York City, and at Dr. Howard A. Kelly's Hospital, Baltimore. It is reported that at these clinics cancer and kindred diseases which have shown improvement under radium treatment will be treated free.

The General Education Board, founded by John D. Rockefeller, announced on October 24 an appropriation of \$1,400,000 for the establishment of the William H. Welch Endowment for Clinical Education and Research of Johns Hopkins Medical School. The departments of medicine, surgery and pediatrics will be so reorganized that the professors and their associates in the clinics and the laboratories will be able to devote their entire time to scientific work. They will be in position to do any service that either science or humanity demands and they will be free to see and treat any one, whether inside or outside the hospital, but they will accept no personal fee for any such service.—*Medical Council.*

AN EPITOME OF CURRENT MEDICAL LITERATURE.

NITROGLYCERIN.

There has been but little literature regarding the effects of nitroglycerin on the workers in its manufacture during the last twelve years, says G. E. EBBRIGHT, San Francisco (*Journal A. M. A.*, January 17). He quotes from an article and also a private communication by Dr. George E. Laws (*Journal A. M. A.*, March 5, 1910) as to the maniacal excitement occasionally produced among these workers and also as to its aphrodisiac effect and also the well-known facts regarding the physiologic action. Observation of the working conditions among the employees of the Dupont Powder Company at Hercules, Cal., showed that occasionally a workman was found who was immune to the action of the drug, but this is a very rare exception and the degree of the exposure required to produce the characteristic headaches varies with the individual, with the weather and the accustomization. A new man is very susceptible and warm weather aggravates the symptoms. After three or four days a considerable degree of immunity is produced but the symptoms may still appear from excessive exposure. The immunity is, however, rapidly lost and the absence from the work for a couple of days is sufficient for this. It is a common practice among the workmen to put some nitroglycerin on their hat-bands during periods of absence from the factory in order to maintain their immunity. A characteristic symptom is a throbbing headache; this is often so severe as to cause loss of sleep, but he did not observe maniacal attacks in his examination. Permanent effects seem to be lacking. The general health was uniformly pretty good and there were no evidences of destructive blood-changes. Alcohol aggravates the symptoms by relaxation of the

blood-vessels. A case to the point came to his notice: A foreman of an excavating force handled a large quantity of dynamite and following advice took some whiskey to relieve symptoms produced, resulting in an attack of homicidal mania. No evidence of a nitroglycerin habit was noted, but he mentions the habit of cordite-eating observed among British soldiers. The natural dread the workers in nitroglycerin have of the headaches produced precludes any likelihood of the acquiring of a pernicious habit. As far as the limited number of cases afforded an opportunity to judge, there was no evidence of any cardiovascular changes of any importance and long continuance at the occupation seems compatible with general health.

HOUSE-FLY AND DIARRHEAL DISEASE.

D. B. ARMSTRONG, New York (*Journal A. M. A.*, January 17), gives an account of an interesting experiment made last summer in a district in the borough of the Bronx inhabited solely by Italians, and generally insanitary and overcrowded. One area inhabited by 311 families, or 1,725 persons, 362 of them children under 5 years of age, was selected for an experiment in the elimination of the house-fly. The methods used were educational, by oral instruction and distribution of literature and moving pictures and also by careful screening and the use of fly-traps. Another similar area, containing the same number of families was left in the ordinary conditions and disease rates compared. All other sanitary measures were similar in both. In the protected area there were 110 cases of diarrheal diseases recorded. In the other there was a total of 165. The ratio between the protected and unprotected one as regards non-communicable disease was 36 to 40. These leave a ratio of 74 to 125 in the matter of communicable diseases reported in the two districts. These figures, while not conclusive, strongly indicate the possibility of betterment by exclusion of the flies and justified the giving of greater emphasis of education work among mothers regarding the dangers of the house-fly to the lives of infants. It is probable, Armstrong says, that similar experiments on a large scale will be conducted another summer under the auspices of the Bureau of Public Health and Hygiene in New York City.

OXYCEPHALY.

I. F. STEIN, Chicago (*Journal A. M. A.*, January 17), reports the observation of a case of oxycephaly (steep head), a Roumanian Jewess who came for treatment for cardiac trouble, mitral stenosis, in no way connected with the condition described. The head dimensions are not given, but the patient presented this unusual deformity, which has received but little attention in the literature. It would appear from his remarks that early and rapid blindness is a frequent accompaniment of this condition, but it has not occurred in the case reported. "The shape of the head, prominence and size of the eyes, slightly deviated nose, high arched palate, intense headaches, 'nervous fits' (which were previously ascribed to hysteria by former medical attendants) and characteristic dimpling of the inner table of the skull, as shown in the roentgenogram, establish the diagnosis of oxycephaly in the case. In his, as in other reported cases, the intelligence is not impaired."

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For the treatment of furunculosis and carbuncle, sycosis, suppurative acne, eczema, felons, osteomyelitis.

Streptococcus Vaccine (Streptococcus Bacterin).

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For the treatment of urethral infections due to a variety of strains of bacteria in combination with the gonococcus.

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For prophylactic treatment against meningitis.

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Rubber-stoppered glass bulbs of 1 Cc.,	-	-	-	-	package of three, \$0.75
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THE RECOVERY FROM LA GRIPPE.—Since the first appearance upon our shores of that unwelcome infectious disease known as La Grippe, the medical journals have been filled with articles advocating different methods of treating the attack itself and its various complications. But little attention, however, has been paid to the important question of how to best treat the convalescent subject. Among all of the acute infections there is probably none that is as likely to leave the patient quite as thoroughly devitalized and generally prostrated, as does a sharp attack of La Grippe. For some reason the degree of prostration from grippal infection appears to be entirely out of proportion to the severity of the attack itself. This peculiarity renders it advisable and usually necessary to strengthen and support the general vitality of the patient during the period of convalescence. Complete rest, nourishing food, plenty of fresh air and stimulation according to indications are, of course, distinctly important measures. At the same time tonic and hematitic medication should not be neglected. Probably the most generally acceptable and efficient general tonic and hemic reconstituent for such patients is Pepto-Mangan (Gude), a bland, non-irritant and promptly absorbable combination of the organic peptonates of iron and manganese. This efficient blood-builder and reconstructive does not disturb digestion nor induce constipation, and is readily taken by patients of all ages.

THE PNEUMONIA CONVALESCENT.—While the course and progress of acute lobar pneumonia is short, sharp and decisive, the impression made upon the general vitality is often profound, and apparently out of proportion to the duration of the disease. Even the robust, sthenic patient is likely to emerge from the defervescent period with an embarrassed heart and general prostration. In such cases the convalescent should be closely watched and the heart and general vitality should be strengthened and supported, and this is especially true as applied to the patient who was more or less devitalized before the invasion of the disease. For the purpose indicated, strychnia is a veritable prop upon which the embarrassed heart and circulation can lean for strength and support. As a general revitalizing agent is also needed at this time, it is an excellent plan to order Pepto-Mangan (Gude), to which should be added the appropriate dose of strychnia, according to age, condition and indications. As a general tonic and bracer to the circulation, nervous system and the organism generally, this combination cannot be surpassed.

STRANGULATED HERNIA.

W. W. MOTT, White Plains, New York (*Journal A. M. A.*, January 17), reports an operation on a case of strangulated hernia in a woman, aged 83. The operation included the resection of 6 inches of the ileum and an end-to-end anastomosis with sutures. The patient was discharged from the hospital the twentieth day after the operation and has since then been on regular diet and had a normal bowel movement each day. There is no abdominal distention and the femoral ring remains permanently closed. The case reported on account of its unusual features, the great age of the patient and the successful resection of the ileum in an acute case of strangulated hernia.

ALCOHOLISM.

B. L. SPITZIG, Cleveland (*Journal A. M. A.*, January 17), offers a physico-chemical theory of alcoholism. He has observed that many tipplers begin at an age when boyish habits and tastes yield to those of a man. At maturity the demand for carbohydrates is materially lessened and the appetite for alcohol replaces it in the tippler. There is sometimes a positive aversion to sugar. "The chemical relation of carbohydrates to alcohol is significant. Dextrose is convertible to carbon dioxide and ethyl alcohol. The combination of carbon, hydrogen and oxygen makes for increased nutrition whether it be derived from alcohol or indirectly from sugars and starches. The human organism when deprived of sufficient sugar seems of necessity to demand an increased supply of alcohol. Conversely, when the body is satiated with alcohol it has little need for carbohydrates." Based on this theory his treatment for chronic alcoholism consists in gradually withdrawing alcohol and replacing it in the diet with sugar. When there is a strong distaste for this he uses lactose, a dram every two hours, given in powder for the psychic effect. The gastric and nervous disturbances are appropriately treated and, after self-confidence is gained, all medication ceases and sugar is gradually reduced. With care, glycosuria can usually be avoided.

TETANUS.

W. V. BREM, Los Angeles, Cal. (*Journal A. M. A.*, January 17), reports a case of tetanus treated by the "rational" method of Ashhurst and John, consisting in: 1. The intraneural injection of antitoxin. 2. Intraspinal injection. 3. Intravenous injection. 4. Intrafiltration of the tissues at the site of injury. The quantity used being much greater than that hitherto given subcutaneously. In 1910 he treated four cases in the Colon Hospital, C. Z., by intraneural and subcutaneous injections, which were reported by E. W. Hill (*Arch. Int. Med.*, December, 1911). One of these patients recovered, and from this patient experiments were performed on guinea-pigs, which seem to indicate the destruction of the tetanus bacillus by post-orbital injection of antitoxin. Of the cases here reported in detail, the following is the author's summary: "Young man of 21 years, cephalic tetanus, six days' incubation period, gradual onset, treatment begun eight days after injury and two days after onset of symptoms; intraneural injection of unknown but small quantity of tetanus antitoxin into left facial nerve; intraspinal injections of 23,000 units; intravenous injections of 60,000 units; subcutaneous injection of 8,000 units; infiltration of tissues about the site of injury with 2,000 units; total quantity of antitoxin, 98,000 units; development of meningitis within six hours after first intraspinal injection; purulent fluid sterile by microscopic and cultural aerobic and anaerobic examination; rapid recovery from tetanus and meningitis." The character and symptoms of this case would indicate a grave prognosis, though the gradual progress of the symptoms might mitigate it. The result, however, speaks well for the Ashhurst and John treatment. Brem especially calls attention to the aseptic meningitis following the serum injections, a phenomenon not heretofore noticed, except by Sophian and Sladen. Their observations and the author's experience seem to demonstrate that the introduction of a foreign serum into the spinal canal may cause an apparent acute suppurative meningitis, but without bacteria in the cerebrospinal fluid. This may be very alarming when it occurs and the physician may fear that he has infected the patient when such a reaction occurs. Probably many similar cases will be observed with the more extensive use of serum treatment.

THE SPONGE COUNT.

P. E. TRUESDALE, Fall River, Mass. (*Journal A. M. A.*, January 17), says that few surgeons of large experience have escaped the humiliating experience of having a sponge left in the abdomen longer than intended, or the unnecessary exploration for an unaccounted for sponge afterward discovered outside. These accidents may happen even with the most efficient assistants. The method adopted by himself and Dr. R. W. French is thus described: "We use sponges which measure a yard in length and 2 and 4 inches wide, respectively. To the end of each is securely sewed a piece of narrow tape 8 or 10 inches long. To this the nurse ties a numbered metal check the size of a silver dollar, before the sponge is delivered to the surgeon for use. Thus it becomes a very simple matter, toward the end of an operation, with the sponges arranged consecutively on a separate table, for the nurse to know that every sponge is in her possession." Since its adoption they have been free from the embarrassments about sponge counting.



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ALCOHOLISM.

ALFRED GORDON, Philadelphia (*Journal A. M. A.*, January 17), discusses the possible preventive measures to be taken against alcoholism. The alarmingly increased numbers of victims, he says, calls for a very serious consideration of the subject. And he asks, Can society protect itself by laws against alcoholism? In his opinion, legislative acts can be of assistance only by limiting or preventing the unlimited manufacture of alcoholic drinks. Such legislative measures, however, are not to be expected in view of the fact that such laws are usually enacted by legislators some of whom are financially interested in the sale and manufacture of liquors. Laws for punishing drunkenness are ineffective because they strike only at the effect, not the cause. The protection of the community is of paramount importance and it can be effected in his opinion by special institutions, hospitals for inebriates, having the power of judicial as well as medical authority. It is urgent that alcoholics with, as well as recidivists without, a criminal record be placed where they can receive medical treatment. Special laws are of course necessary to regulate the authority of the medical officer in charge, and he would have a judicial officer attached to the hospital staff. The public should be instructed as to the value of such an institution and all alcoholics should be committed to it. It is not the immediate excess that calls for treatment, but the underlying make-up of the individual, and cases of brief histories are susceptible of recovery or reform. Inveterate alcoholics and those with criminal records should be detained indefinitely for the protection of society. Detention of an alcoholic among others in an institution such as herein proposed when he has apparently recovered his mentality would not be as prejudicial to him as detention in an ordinary asylum. The main principles of management are summed up by him as: first, "The proper diagnosis and classification; second, absolute prohibition of alcohol; third, appropriate dietetic and hygienic measures, and, fourth, systematized bodily employment properly directed." Gordon sees more benefit in the restriction in the manufacture of liquor as a measure for checking alcoholism than in reducing the number of places of its sale, but this latter is also useful. Still more useful is education, and the propaganda should be specially directed toward the young. The general public should also be familiarized with the dangers of alcoholism as conducing to the degeneration of the species. It produces, he says, an individual deterioration and sterility of the race with all its serious consequences.

LOCAL ANESTHETICS.

A. H. MILLER, Providence, R. I. (*Journal A. M. A.*, January 17), calls attention to the lack of exact statements of the dosage of the various substitutes for cocain now in use as local anesthetics. These are used because of their lesser toxicity, but while the dosage of cocain is indicated exactly in the United States Pharmacopeia, the proper dose of its substitutes is generally unindicated and impossible to learn from medical literature. The dosage of these drugs is given in the literature furnished by the manufacturers in strength of solution, leaving one to infer that any amount of the solution of that strength can

be safely employed. The dosage is calculated for the local effect only and the general effect of the drug is not considered. To illustrate the point, he refers to a series of cases reported to the Providence Society of Anesthetists, Feb. 28, 1913, of 113 minor surgical or genitourinary operations in which alypin, one of the safest cocain substitutes was used. One death occurred and in two other cases serious symptoms occurred. The alypin was used in the strength of solution recommended and the amount not definitely measured. In the death, about 2 drams of a 10 per cent. solution of alypin were introduced into the urethra and bladder. There was nothing in the literature of this anesthetic to indicate that the amount used was an overdose. In the United States Pharmacopeia the dose of cocain is given as $\frac{1}{2}$ grain and the dose of cocain substitute should be stated as definitely. If this is done further fatalities may be avoided.

GASTRIC IRRITATION FROM DRUGS.

E. G. BALLENGER and O. F. ELDER, Atlanta, Ga. (*Journal A. M. A.*, January 17), recommend hardening by formaldehyd of the capsules containing drugs that are likely to irritate the gastric mucosa, so that they will pass into the intestine before solution. At first they dipped the filled capsules for one minute in a solution of 1 part 40 per cent. formaldehyd to 40 to 60 parts water. After using this dilution, two weeks should be allowed to intervene before using the capsules. A more satisfactory method is to expose the capsules to the vapor of the solution of liquor formaldehyd in a closed vessel. About 15 c. c. of the solution should be used for each cubic foot of space in the vessel and the time should vary from six to perhaps twelve hours, according to the time of use. The hardening increases with time and six hours or less may do if the capsules are not to be used at once; the longer time may be required with their immediate use. An even better method of carrying some irritant drugs through the stomach is to combine them with melted suet and paraffin, which are not digested in the stomach but let free the drugs in the intestine gradually as they pass down the tract. For this reason this method is better in giving strong alkaline drugs, which might cause irritation if too suddenly liberated *en masse*.

RABIES.

A case of rabies treated, after development of the symptoms, with neosalvarsan and quinin is reported by M. B. WESSON, El Paso, Tex. (*Journal A. M. A.*, January 17). He also reports a case of lyssophobia following skunk bite, with recovery. The hydrophobia case ended fatally, the drug seeming to have no effect, excepting possibly controlling convulsions. The patient could swallow water up to four hours before his death, though with great difficulty, and he never became violent during the whole course of the disease. Paralysis became general and death occurred on the second day from asphyxia during a slight paroxysm. If neosalvarsan and quinin as given can control to any extent the convulsions of hydrophobia, as no other drug can do, they will be invaluable in this disease.

UNITED STATES DEPARTMENT OF AGRICULTURE,
Office of the Secretary.

Washington, D. C., Sept. 19, 1913.

MEDICAL MILK COMMISSIONS AND CERTIFIED
MILK.

The first bulletin in the new departmental series of the U. S. Department of Agriculture is a contribution from the Bureau of Animal Industry entitled Medical Milk Commissions and Certified Milk; this is a revision of a previous bulletin on the same subject.

The organization and objects of the first milk commission are described and the origin and meaning of "certified milk" are set forth. The word "certified" has been registered in the U. S. Patent Office and may only be used by a duly organized medical milk commission.

The first milk commission was organized in 1893. Since that time over 60 commissions have been established but nearly one-third of that number are inactive at present.

About 125 dairies are engaged in producing certified milk and the daily production is nearly 25,000 gallons, an increase of 300 per cent. in five years. While this seems a remarkable increase, it should be remembered that only about one-half of 1 per cent. of the total milk supply of the country is certified.

While the chief demand for certified milk is for infants and sick people, it further serves to teach the public the value of careful methods in milk production and the extra cost of absolutely clean milk.

The bulletin describes the equipment and methods necessary for the production of certified milk. It is pointed out that expensive equipment is not a necessity so much as a careful and unremitting attention to details.

In 1907 the American Association of American Milk Commissions was organized. The methods and standards for the production and distribution of certified milk adopted by this association at its 1912 meeting are given in the appendix to the bulletin.

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WARNING AGAINST A PRESCRIPTION FRAUD.

Washington, D. C.—The Department of Agriculture, under the Food and Drugs Act has recently been investigating a new trick of certain patent medicine and proprietary medicine vendors which it is believed is deceiving a large number of people into spending money for patent medicines under the impression that they are getting regular physicians' prescriptions for nothing.

In a number of publications the Department finds advertisements are appearing which state that the man or woman whose name is attached was saved from death from one of a number of serious diseases through some wonderful prescription given to him or her by a regular physician of unusual skill who will not allow his name to be used because of medical ethics. The advertisement states that the writer feels it to be a duty to communicate this invaluable recipe to humanity in order to save them from similar ills. The offer is then made to supply this prescription without charge to any one who will address a post card to the advertiser. People who do not stop to wonder who is to pay for the advertisement and the return postage and writing of the prescription are caught by this fraud and ask for the prescription. In due course a regular prescription is returned. This contains a number of ordinary ingredients and then under a technical name will call for a large proportion of some patent medicine or proprietary drug. The recipient takes this to a drug store to be filled and the druggist finds that he has to buy some of this patent preparation in order to fill it. He, therefore, has to order a large package or bottle of it and to make a profit must charge the customer a good, stiff price for filling the prescription. The customer, of course, gets what is in effect simply a patent medicine which, save that it bears a druggist's label and a prescription number, is the same as a patent medicine sold under the maker's own label and in the maker's own bottle.

The Government can not reach these people under either the Food and Drugs Act or the Postal Laws, because the scheme is so planned as to evade Government laws. The deception and misrepresentation appear in advertisements, circulars, letters, etc., separate from the package and the medicines are seldom sent through the mails. The best the Department can do, there-

fore, is to warn the people to be particularly suspicious of those who spend money for advertising space, postage, and letter writing, seemingly out of their love for humanity. In all of these cases there is a profit-making scheme back of the seeming philanthropy.

THE COST OF TUBERCULOSIS.

In the annual report of the National Association for the Prevention and Study of Tuberculosis, it is stated that the sum of \$29,000,000 was used last year in the various applications of scientific and medical activities dealing with the prevention and treatment of tuberculosis. From the schedules of expenses which are drawn up for public information, it appears that sanatoria and hospitals cost \$13,000,000; care of patients in dispensaries and open air schools, about \$825,000; while State and local boards of health spent over \$250,000. Public funds furnished \$13,800,000, or nearly seventy per cent. of the total. The greatest amount spent by any State was credited to New York.—*N. Y. Med. Jour.*

THE SALE OF BICHLORIDE TABLETS.

The Department of Health of the City of New York has further amended the penal code so that on and after March 4th it will be illegal to sell bichloride of mercury except in the form of triangular blue tablets labeled poison. The latest addition to the various methods proposed for preventing accidental poisoning from mercury bichloride is the saturation of bibulous paper with a corrosive sublimate solution. Pieces of this paper, measuring four inches by two, have been placed on the market; when soaked for two minutes in a pint of water one piece gives a solution of one to 1,000. It would be manifestly impossible for any one to swallow such antiseptic leaves, which are thus superior from every point of view to tablets.—*N. Y. Med. Jour.*

A ten per cent. ointment of lead iodide is recommended in treating induration of the mammary gland.

Hexamethylenamin and similar products do not act as urinary antiseptics when the urine is alkaline.

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AN INTERNATIONAL SOCIETY FOR SEX
INVESTIGATION.

Interest in sex hygiene is by no means confined to this country. The Berlin correspondent of *The Journal of the American Medical Association* reports the organization of an international society for sex investigation in Berlin November 16, the Internationale Gesellschaft für Sexualforschung. The organizations which are active at present in the field of sexual investigation are chiefly concerned with practical and humanitarian purposes, such as hygiene, educational and legal, social and moral reform. The new society is to devote itself to a purely scientific investigation of sexual problems. For this reason the man at the head of the society is not a physician, but Prof. J. Wolff, who is professor of economics at the technical high school in Charlottenburg (*Lehrender Nationalökonom*). It is also a notable fact that a professor of theology in the Berlin University belongs to the executive committee. In the meeting for organization he emphasized the fact that he hoped for advantages from the new society in three fields, psychology, economics and history.

Closely related to this work is the action of the association of German statisticians which has determined to secure information with reference to the number of venereal patients at present under medical treatment. As experience has shown and as every practitioner knows, such an investigation will not give the entire number of patients, but the knowledge obtained from the large number of cases available will be of value. A committee appointed by the association in conjunction with the executive committee of the German association for combating venereal diseases has elaborated a plan by which it is to be determined how many persons with venereal disease were under medical treatment in the period from November 20 to December 20, 1913, inclusive. This is determined by including in a table the number of patients visiting the office in this time in such a manner that each patient is reckoned only once. The cases treated in the public hospitals are collected directly by the statistical bureau.

THE "SHOP OCULIST."

The "Shop Oculist" is an established institution in most shops and factories. He is a workman who has had considerable experience

in removing cinders, emery, etc., from the eyes of his fellow employees. He usually has a steady hand and a good eye, and has two or three instruments and a magnifying glass with which to remove the foreign body. These tools are hardly ever clean, and he himself makes no pretense at being surgically clean. He gets the patient in a strong light, and picks and scrapes the delicate tissues of the eye until he dislodges the little particle. At least, he tries to dislodge it, and usually succeeds, but almost invariably leaves behind much scratched and roughened tissue. As a rule, the eye gets well, for a strong man can withstand much physical misfortune, but even if he gets well, the unnecessary scraping leaves a scar, usually in the center of the eye, which more or less permanently interferes with vision. Frequently the dirty and unskilful manipulations of the "shop oculist" produces an infection or poisoning of the eye, and pus forms and the eye becomes lost or very badly damaged, and the other eye even may be lost from sympathetic inflammation. The "shop oculist" is responsible for many eyes that are lost by improper treatment directly after a slight injury.

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A rural magistrate, listening to the testimony of the witness, interrupted him, saying: "You said that you made a personal examination of the premises. What did you find?"

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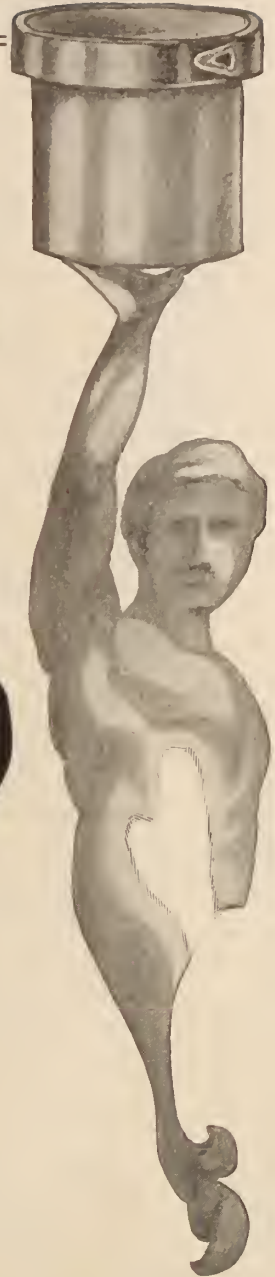
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TO CONTROL RADIUM LANDS.

Representatives Foster of Illinois, and Ferris of Oklahoma, introduced bills on January 12th providing for the segregation of any lands in the public domain upon which there may be carnotite, pitchblende, or other radium bearing ores, and for their development by the Government. The Foster bill was prepared by the Department of the Interior and indorsed by Secretary Lane. Representative Ferris is chairman of the House Committee on Public Lands, and introduced his bill so that it might be referred to his committee. Neither bill proposes to interfere with any radium deposits upon lands not belonging to the United States.—*N. Y. Med. Journal.*

MURDER BY DISEASE GERMS.

Some time ago the daily press was considerably aroused over an attempt at blackmail through mailing virulent germs to various wealthy persons, together with pleas for aid and the offer of an antidote or positive cure. Recently in Germany a man named Hopf was arrested on suspicion of having killed his wife by inoculation with disease germs and the internal administration of arsenic. During the trial, information

was brought out to the effect that he had probably on former occasions murdered other members of his family in the same way. Before the criminal court in Frankfort he was charged with the murder of his father and his mother, two of his children and his first and second wives, and with the attempted murder of his third wife. All the persons killed had been heavily insured. Arsenic was found in the bodies of the children and the first wife, but the second wife he had cremated. He denied having inoculated his wives, and there was no post-mortem evidence that he had done so; but he stated that he had used such bacteria for experiments on dogs in connection with certain private studies, although he was not a bacteriologist or a medical man. The bacterial cultures were purchased in Vienna, because no German laboratory was willing to supply the cultures which he ordered, using the name of an alleged scientific institution. The jury found him guilty of murder in all the cases except those of his parents. Medical experts declared that the man was insane. In Germany, says *The Journal of the American Medical Association*, there is a law forbidding the sale or giving of pathogenic micro-organisms to unauthorized persons; it is reported that the Austrian authorities are about to adopt similar regulations.

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One good effect of the income tax law will be the necessity for the adoption of better business methods on the part of physicians and a more careful and systematic method of keeping accounts. It is quite possible that a limited number of physicians have a net income of over \$4,000 per year, and yet we venture to say that a very large proportion of doctors are unable to say just what income they enjoy and what proportion of it is used to pay expenses directly connected with the profession. Even though a doctor is not so fortunate as to have an income which makes him liable for the income tax, yet he must remember that his income is subject to inquiry on the part of the tax collector who may ask for a definite account of income and expenditures, and books will have to be produced to substantiate the statements made under oath. Therefore, it behooves every doctor to begin keeping book accounts, and in particular a record of all receipts and expenditures.

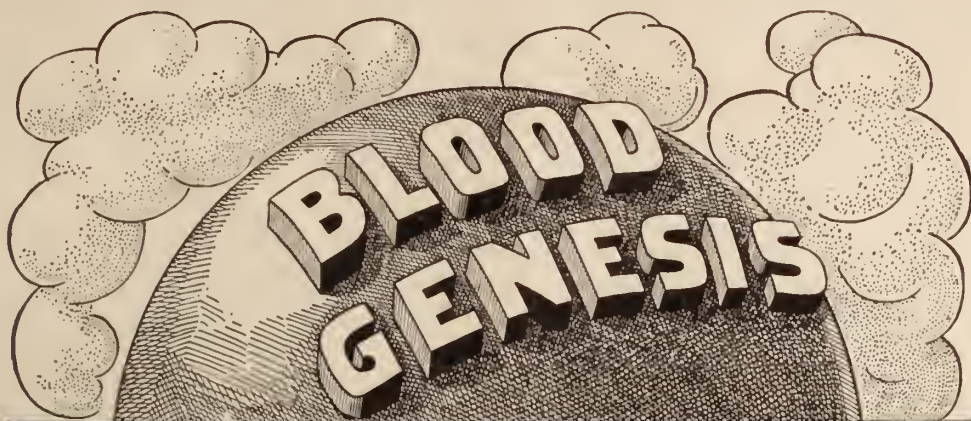
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James Black Merritt, M. D., University of Vermont, Burlington, Vt., 1879, died in the Church Home and Infirmary, Baltimore, March 8th, from carcinoma of the stomach.

A WOMAN'S NUMBER.

The May issue of the *Medical Review of Reviews* is to be a woman's number. All the articles contributed will be from the pens of women physicians whose work has achieved national importance. With the growth of the feminist movement, the economic position of women has attracted universal attention. As medicine was practically the first profession open to women, it is only proper at this time to consider whether their entrance into the medical profession has been of benefit.

In order that women may present testimony by which they should be judged, it has been deemed advisable to give them an entire issue to present the evidence of the value of their accomplishments. In the laboratory, in the hospital, in insti-

tutions, at the bedside, and in public service, women physicians have performed a valuable function. As a tribute to their earnestness, enthusiasm, modesty, energy, perseverance, and scientific acumen, the May number of the *Medical Review of Reviews* will be dedicated to the women physicians of America.

Excessive acidity of the stomach often points to developing gall-bladder disease. The stomach is treated too much for acidity, while the liver is treated too little.

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ORIGINAL ARTICLES.

CONCERNING GASTROENTEROSTOMY: ONE CAUSE OF FAILURE, FASCIAL LIGATURE OF THE PYLORUS; AND AN ACCOUNT OF A NEW METHOD OF TREATING ADHERENT PERFO- RATING ULCERS OF THE POSTERIO- R WALL.*

BY

EDWARD ARCHIBALD, M. D.,

Assistant Surgeon, Royal Victoria Hospital, Mon-
treal. Lecturer in Clinical Surgery, McGill
University.

Mr. President and Gentlemen:—

I imagine that most of those present who have performed the operation of gastroenterostomy for pyloric or duodenal ulcer, or who have referred their patients to surgeons for this operation, are not unacquainted with disappointments in the late results. More and more it is being found that the operation of gastroenterostomy, whose curative effects we have up to recently been accustomed to assert to our patients with such confidence, may be of but temporary benefit in no small proportion of the cases. While the statistics of some surgeons of large experience are very encouraging, it remains true that other surgeons with equal experience have been obliged to reopen the abdomen in an unsatisfactory percentage of their patients, in order to remedy—or attempt to remedy—persisting symptoms of such severity as to render necessary the very unwelcome second operation. If to these one adds the number (not inconsiderable) of those patients who, though improved by the operation, still complain of some measure of distress which they are willing to bear rather than to go a second time upon the operating table, it becomes clear that the end results are still far from being ideal. In fact our friends, the internists, are beginning to give voice to complaints, both loud and deep!

*Address delivered before the Vermont State Medical Society, October 10, 1913.

One may say that, taking even the most favorable of published statistics, the percentage of cures is not above eighty, in other words one patient in five is not properly relieved of his symptoms, and one may reasonably conclude that the percentage of cures is decidedly smaller in the hands of less experienced surgeons.

What then are the causes of failure? It is not my purpose here to review in any detail the list of possible causes of failure. The operation, for instance, has been done under the wrong indications. If we had adhered to the cardinal indication of pyloric stenosis as in the beginning of gastroenterostomy, we should have very few failures to record. Or even if we obeyed Moynihan's dictum, never to do the operation except for plainly visible ulcers, we should not do so badly. But not infrequently a surgeon has been tempted to do it for such things as atonic dilatation, gastroptosis, hyperacidity, and even, by error, for the gastric crises of tabes. The lesson has now been learned to leave such things alone. At present discussion ranges round the question whether one should operate upon open ulcers which have not caused pyloric stenosis; and if so, what should be the nature of the operation. I need not discuss this question at the moment. But granting the case of a chronic pyloric or duodenal ulcer causing distressing sensations, but without stenosis, a second cause of failure has been found in the very fact of the absence of stenosis. Gastroenterostomy being completed, and a new and apparently conveniently short cut being offered to the enemy, he has consistently refused to take it, and has preferred to take his old road through the pylorus, continuing his guerilla warfare on the ulcer. This has taught us the necessity of barring the road to the ulcer at the time of doing the gastroenterostomy, and at the present day it is generally agreed that pyloric stenosis must be brought about in addition to the gastroenterostomy, when such stenosis does not already exist. Paterson, alone, (of London) disagrees with this view, and claims almost perfect results without pyloric exclusion. In fact he regards the good effects of the gastroenterostomy as being due chiefly to the reflux of alkaline bile and pancreatic juice into the

stomach, with the neutralization of the excess of hydrochloric acid so frequently present. The operation in his view is a physiological one, not a mechanical one. In parenthesis, it may be remarked that it is difficult to see why, from his standpoint, the operation should be necessary at all; one would expect the continuous administration of alkalines to accomplish the same effect.

A third cause of failure lies undoubtedly in the lack of proper attention to diet after the operation. The conditions of motility are certainly altered by the operation, and the conditions of gastric secretion were already abnormal before the operation. Both these indications must be met; on the one hand by giving small meals more frequently so as to avoid distension (which leads, as Cannon has shown, to actual mechanical obstruction of the new stoma); on the other hand by antacid remedies to neutralize the usual hyperacidity. To tell a patient that he can now eat anything and everything, and as much as he likes, is to invite him to seek another medical man sometime later.

I need do no more than mention a fourth cause, that of the development of mechanical obstruction at the point of anastomosis. We have learned pretty well how to avoid this by using the posterior wall of the stomach; by avoiding the long afferent loop; by strict asepsis; by anchoring the wall of the jejunum to the stomach for an inch or two on either side of the stoma; and by not making the stoma too small.

After this brief resumé of the causes of failure, I would like to go on to suggest another cause which has, I think, received too little attention in the past. Since Kelling, in 1902, and Cannon, in 1906, demonstrated the predominant role played by the muscular wall of the stomach in expelling food, it has been the custom to declare somewhat dogmatically that gastroenterostomy is not a drainage operation, and the stoma was not to be regarded as a hole in the bottom of a bag through which the stomach contents dropped in obedience to the law of gravitation. This is of course true in the main, but not altogether true. Gastroenterostomy is not a drainage operation, but neither is it entirely a physiological operation. I feel convinced that the law of gravitation still obtains to some extent; in what respect I must now try to make clear. In order to do this I must relate as briefly as possible the results of some experimental work done during last winter

by Dr. Scrimger and myself in the Laboratory of Experimental Medicine at McGill University.

The expelling power of the gastric muscle varies widely in its different parts. Roughly speaking the stomach is divided into two portions, the cardiac and the pyloric. The function of the cardiac portion, or what we call ordinarily the body of the stomach, seems to be that of exercising a certain tonic contraction on the contents, while the pyloric portion is characterized by peristaltic waves designed to expel the contents of the stomach. Intra-gastric pressure in the cardiac portion is slight, while in the pyloric portion it is high. Upon the basis of these physiological facts Dr. Scrimger and myself undertook a series of experiments designed to show just how the stomach expelled its contents through a gastroenterostomy opening according as that opening was placed in the cardiac portion or in the pyloric portion. In some experiments we closed the pylorus by tying it off with a strip of fascia taken from the anterior sheath of the rectus muscle, while in others we left the pylorus open. The experiments were carried out upon dogs and cats, which were in every instance put under deep ether anesthesia. We divided them into four groups:—

First, those in which the stoma was placed in the cardiac portion, while the pylorus remained open.

Second, those in which the pylorus was closed.

Third, those in which the stoma was placed in the pyloric portion with the pylorus open.

Fourth, those in which the pylorus was closed.

Time is lacking to relate to you the details of these experiments.

Speaking briefly, it may be said that the experiments demonstrated afresh the fact that the cardiac portion possesses very poor expelling power. With the stoma in the cardiac portion, and the pylorus open, the food passed mostly by the open pylorus; with the pylorus closed, the food passed slowly and incompletely through the stoma, and was apt to be retained and sometimes was ultimately vomited. The animals got enough nourishment to live but not enough to thrive on. On the other hand, when the stoma was placed in the peristaltic portion, that is the pyloric portion, the food was expelled very effectually, and within normal time, whether the pylorus was closed or not.

For present purpose the chief result of these

experiments would seem to be that a stoma placed in the body of the stomach is apt not to act efficiently because the musculature of that portion of the stomach does not possess sufficient contractile power to expel the food ingested in the ordinary way. If, then, in addition to any lack of expelling force the opening is placed well up on the stomach, let us say about midway between the lesser and greater curvatures, and running parallel to the long axis of the stomach (as is usually done) there may easily result a sacculation of the stomach below the level of the new opening somewhat analogous to the condition that one finds in the bladder in the presence of a much enlarged prostate. As I have seen in more than one case, only that portion of the food which is above the level of the opening goes through the opening; there is apt to remain a collection of food in the sac of the stomach below this, which sometimes may be vomited. This, I believe, is one of the causes of failure—or partial failure—of a gastroenterostomy which technically may have been perfectly well done.

What is to be done from a practical standpoint to prevent such a failure? The text books tell us, without offering much explanation, that the anastomosis should be placed in the pyloric portion, or as near to it as possible. I believe the advice is perfectly good, but when one comes to examine the anatomical conditions one finds in the first place that, if we assume the pyloric portion to begin about at the *incisura*, that is at the vertical line running down from the right border of the cardia and passing through the stomach about the concavity usual in the J form of stomach, we find that in many cases (from actual measurement on the post mortem table) it is practically impossible to anastomose the jejunum in the “no loop” operation with the pyloric portion of the stomach without producing a kink, for the pyloric portion lies almost entirely to the right of the point of exit of jejunum from under the mesenteric artery. In the ordinary “no loop” operation, it is, I think, quite clear that the stoma is almost always placed to the left of the pyloric portion, and well within the cardiac portion. The only way in which one can be certain of placing the stoma in the pyloric portion, is by using the short loop.

In this fact then, namely, that the “no loop” operation as usually practiced is very apt to get the whole of the anastomotic opening, or at least

the greater part of it, in the cardiac portion where the expelling power is poor; not in the pyloric portion where the expelling power is good, and also to get it too high on the stomach wall lies one cause of the failure of gastroenterostomy to relieve the symptoms.

It may be asked—how are we to determine the border line between the cardiac and pyloric portions? It is somewhat curious to find that this question has not hitherto been discussed in regard to the operation on the human. Cannon has demonstrated the fact that the line of division is not quite definite, and varies within somewhat narrow limits according to the distension of the organ. This is easily demonstrable in animals, but at operation upon humans peristalsis is never observed, for the stomach is usually empty, and the patient is under ether. Thus any estimate as to where the peristaltic portion begins is a very relative one, and at present can be based only upon data obtained from observing peristalsis under the X-Rays during the course of a Bismuth meal. We very much need some method by which we could initiate normal peristalsis in the stomach during operation. Cannon has used a solution of Barium chloride, and Dr. Scrimger and I have found that a solution of one in 500 painted upon the serous surface of the stomach in the dog under ether will start normal peristalsis. It is well known, however, that Barium chloride is decidedly poisonous, so that, while the animals so far have shown no effects of poisoning, one hesitates to try the method in the human. I anticipate, however, that in the strength mentioned, and in very minute quantity, as when painted on the peritoneal surface, there would be no poisonous effects even in the human. If it should prove that we can use Barium chloride as a stimulant to peristalsis, it would be a great step in advance. The application of hot water at about 120° Fahr. is sufficient in the dog to start peristalsis, but I have found it fail several times in the human. I have also tried faradism to the stomach wall and to the lesser omentum, but with negative results in the human, save in one instance where a few contractions resulted.

To come back to the question of failure of the gastroenterostomy as the result of placing the stoma in the cardiac portion, it seems to me that gastroenterostomy may certainly be—in part at least—a *drainage* operation where the stoma is in the feeble cardiac portion. Here the stoma should

certainly be placed as near the greater curvature as possible. In spite of the claims of Kelling, I think it may be asserted that gravity plays some part in the emptying of the stomach. While in many instances the weight of the ingesta is very close to that of water and consequently no more than balances the weight of the other viscera of the abdomen, it is frequently the case that the ingesta are heavier than water, and therefore ought to sink by their own weight through the stoma, if the stoma is favorably placed. This can certainly be seen to occur in X-Ray observations in the case of Bismuth, as I had occasion to observe two or three months ago in the patient whose history I shall shortly relate to you.

I turn to the consideration of a method which, so far as I know, has not as yet been described, for the treatment of adherent perforating ulcer of the posterior wall and lesser curvature. It is well known that the danger of resection in these cases, particularly where the pancreas has been invaded, is considerable, even when as W. H. Mayo advises, the ulcer is excised through an opening made in the anterior wall. Particularly is this the case in patients who are seriously reduced from prolonged malnutrition and possibly from hemorrhage. This was the case with the patient whose history I now briefly present.

She was a woman of forty-four years of age who was admitted to the Royal Victoria Hospital on July 2nd, 1913. She had been quite well until about two and a half years ago, when she began to have pain in the shoulders and back, and eructations of gas. The pain was sharp and came on three to four hours after food. In July, 1911, nausea and vomiting began. After treatment she remained well from October, 1911, to March, 1912, when the pain returned; this lasted at intervals 'till January, 1913. In March, after a slight temporary improvement, she vomited blood for the first time, and since then she has had frequent vomiting, often with blood. She had lost thirty pounds in the last four months.

In the stomach contents we found a total acidity of 59, free acidity, 38, and very marked evidence of blood, which was also found in the stools. The diagnosis of gastric ulcer was confirmed by an X-Ray photograph which showed in addition that it was a perforating ulcer involving the lesser curvature and posterior wall. There was also a spasmodic hour glass stomach, and stenosis of slight degree at the pylorus, causing

evacuation to be incomplete after seven hours.

I do not wish here to go into much detail concerning the case, which was very interesting in many respects, but would merely say that at operation the preoperative diagnosis was confirmed. On the posterior wall of the stomach there was a large inflammatory mass representing the perforating ulcer, the upper end of which extended as high as the lesser curvature. Adhesions posteriorly were so tight that a posterior gastroenterostomy was found to be impossible. The mass was situated high up under the left hypochondrium in a position so inaccessible to resection that it would have been necessary to mobilize the lower floating ribs if one had wished to attempt such an operation. This, together with the fact that the patient was much weakened by long fasting and hemorrhages, decided me to exclude the ulcer as one has learned to exclude the pylorus, which I did by means of a strip of fascia taken from the anterior sheath of the left rectus muscle. The fascial ligature being tied, it was clear that the stomach as a whole was divided into about two equal parts. In the lower part there was included probably one-third at least of the body of the stomach together with the pyloric portion. Following this an anterior gastroenterostomy with a long loop was done. For three weeks the patient did very well, she was relieved of her pain, had no vomiting, and after the twelfth day began to take some solid food. Then, however, symptoms recurred; the pain became gradually more or less constant, and there was frequent vomiting in which before long, blood was again to be found. About six weeks after the first operation, a Bismuth meal demonstrated that the fascial ligature had apparently held, although four hours after Bismuth was taken, small particles could be demonstrated lying presumably in the base of the ulcer; and that twenty-four hours after the taking of the meal there was still a good deal of Bismuth retained in the stomach. Accordingly a second operation was done with the object of applying another fascial ligature above the first, and at the same time of doing a second gastroenterostomy closer to the greater curvature in order to secure freer evacuation.

The first part of this plan was found to be impossible on account of adhesions, but the second gastroenterostomy was carried through. She did not improve; bleeding became the predom-

ant feature of the case, while pain persisted, and she died in about ten days from hemorrhage and progressive asthenia.

At postmortem it was found that the fascial ligature had yielded to the extent of admitting three fingers in the opening joining the cardiac with the pyloric portions. Blood was found in the upper intestines, and also in the large bowel. The gastroenterostomy openings were well healed, and not obstructed. The ulcer measured 5 cm. in both diameters, and had perforated the stomach wall; its bed was formed by the surface of the pancreas; across its base ran a fair sized arteriole in which was a perforation admitting easily a small probe. It was clear that it was difficult to hope for cure under any circumstances, with an open vessel of this size present; direct ligature alone could have accomplished anything worth while. The cardiac half of the wall of the stomach showed a pouching below the two gastroenterostomy openings, somewhat analogous to the pouching of the bladder behind the enlarged prostate, and this clearly accounted in part for the retention of the stomach contents. In this fact I find an argument against the placing of the gastroenterostomy opening in the cardiac portion of the stomach in which peristalsis is absent, or at least for placing it strictly at the most dependent point of the stomach, if one is obliged to use the cardiac portion for this purpose.

Although the result in the present instance of the fascial ligature around the body of the stomach failed to save the patient, I can hardly think that the method in itself was to blame. The presence of the bleeding ulcer, and the giving away of the fascial ligature (which, I may mention parenthetically, is the only time it has done so in a series of five human cases and over a dozen in animals) combined to spoil the ultimate result, but the immediate effect of the operation and the improvement for the first three weeks were decidedly encouraging. I still feel justified in proposing the operation for ulcers of the posterior wall and lesser curvature, which are mechanically difficult to excise, and where excision is notoriously risky. Particularly will this be the case when the ulcer is a perforating one, when there is much inflammatory tissue around it, and when the patient is much reduced from hemorrhages and chronic starvation, and when

the ulcer is situated somewhat inaccessibly under the left floating ribs.

I may say in parenthesis, and in conclusion, that Professor Anschütz of Kiel, to whom I suggested this method last summer, writes me his approval of the method, saying that he had already carried it out in five cases of ulcer of the lesser curvature with operative success in each instance.

A ROUND OF NEW YORK CHILDREN'S CLINICS.

BY

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Frequent visits to many of the children's clinics of New York have convinced me that for wealth of material and novelty of treatment the New York hospitals compare favorably with the reports from the European clinics. I was prompted to make note of some of the interesting cases seen this past summer and did so during a period of two weeks. A brief summary of these cases with a few comments as to the method of treatment may be of interest. The most important point in the treatment of pneumonia was as a rule the conspicuous absence of drugs; fresh air, diet and general hygiene being considered most important, the vaccine treatment was not much advocated.

A considerable number of scarlet fever and diphtheria cases were seen at the Willard Parker Hospital, one point in the diet of the scarlet fever patients is worthy of mention, this is in regard to meat. Pospischill and Weiss claimed that children allowed meat in their diet during the course of scarlet fever were no more likely to develop nephritis than those kept on a milk diet. Gerstley of Knopfmacher's clinic in Vienna confirms this view and further says that the meat diet seems to have a beneficial influence on the red blood cells. Dr. Jerome S. Leopold, by whose courtesy I saw these cases has made similar observations. Inclusion bodies as an aid to diagnosis are generally looked for at the Willard Parker.

Three recent cases of infantile paralysis were seen, also many old cases of this disease. In these cases Dr. Flexner has shown that the intestinal secretions as well as those of nasopharynx are infectious.

A case of achondroplasia at the post graduate school seemed to baffle the class as to diagnosis, this no doubt because the physicians did not have the condition in mind, perhaps having never seen a case, the characteristic stature, short, chubby extremities out of proportion to the trunk should attract one's attention.

Cases of rickets were quite commonly observed in the out patient departments. One boy two years of age was sent to a hospital by Dr. Pisek with a diagnosis of intussusception, the patient having been seen by him, the condition had however existed forty-eight hours undiagnosed, an immediate operation was performed and an invagination of the small intestine nine inches in extent was exposed, the mass was dark, showing rather poor circulation, reduction was accomplished, but death resulted four hours later.

At the lying in hospital I saw Dr. Davis perform a Caesarian section on a patient sent in having repeated convulsions, a live child was removed and the mother recovered.

I witnessed an autopsy on one infant, this was a case of intoxication in which the usual diet treatment failed to give satisfactory results. This case shows the confidence the physician, a leading pediatricist, places on his method of treatment, the failure of a good result and an apparently negative physical examination led him to believe that an autopsy might show conditions as yet undiagnosed. Areas of broncho-pneumonia were found deeply situated.

I saw more than one hundred intoxication cases during these two weeks but was unable to discover much change in treatment from that of 1912. Now, as then, boiled milk mixtures without sugar, Finklestein's eiweiss-milch, or a malt soup are being used, while drugs were quite generally absent. These intoxication cases were seen in the different hospitals and the similarity of treatment was very noticeable.

One point on the treatment of urticaria, several cases of which were seen, is the use of adrenalin chloride subcutaneously, some cases show a rapid improvement in the cutaneous condition. Of course the cause should be removed if possible.

One infant was brought into the out patient department with a swelling in one side of the neck which apparently greatly interfered with breathing because of pressure. Two small incisions had been made over the lateral surface of the swelling where it was quite prominent, no pus had been obtained and the incisions had healed. Upon introducing the finger into the pharynx a soft fluctuating mass could be felt protruding at the posterior pharyngeal wall, an incision was made at this point and a large amount of pus was evacuated, the swelling in the neck also the difficult respiration disappeared at once.

In this region a retro-pharyngeal abscess should always be thought of.

Three cases of typhoid fever were seen, the oldest patient a girl of five years, had been sent into the hospital with a diagnosis of pneumonia. On admission the temperature was 104°F. A thorough examination failed to reveal anything abnormal in the chest, the child was in a semi-stupor, the pupils responding very sluggishly to light, there was some retraction of the head, the abdomen was somewhat distended, very suspicious Kernig and Brudzinsky's phenomenon were present, lumbar puncture showed a clear fluid under slightly increased pressure, no organisms were found upon microscopical examination. The attending physician made a diagnosis of tuberculous meningitis, but typhoid fever was spoken of as a possibility and the patient was sent to a ward with an order for typhoid precautions. A blood examination the following morning gave a positive Widal reaction and the meningeal symptoms had disappeared. These typhoid patients are given raw eggs, cereals, etc. from the first, medicine is given very little or not at all.

One operation for bone transplantation in a case of Pott's disease was seen, Dr. Soule operating, using the method of Dr. Albee.

Several other cases of tuberculous spine were seen which were being treated by the plaster jacket method.

At the babies hospital through the courtesy of Dr. Bartlett, the attending physician, I saw a large number of cases, one of which was a case of amaurotic family idiocy, the pupils having been dilated, I was able to see the Tay, Kingdom, cherry spots without difficulty. These as you know will always confirm the diagnosis of this

condition. Disturbance of metabolism or changes in the ductless glands are being sought.

At the same hospital I saw a cretin a few months of age, two cases of microcephalus and many cases of intoxication, and also feeding cases. One infant with bronchial cyst was seen at the post graduate. Three cases of Erb's obstetrical paralysis were seen here; one in an infant a few weeks of age, the others being three to five years old.

At the out-patient department one child was suspected of having a tape worm and was sent home with directions for taking male fern, the next day the mother returned with several feet of tape worm including the head were found.

One infant with lower dorsal spina bifida was shown. An infant was seen with prolapse of the rectum about eight inches in extent, this condition had existed four days, the exposed parts were bluish and lacked the normal glossy appearance, the mass was reduced under ether by gentle manipulation and the infant was in good shape when last seen, forty-eight hours later.

I saw one infant with congenital laryngeal stridor. Intubation, tracheotomy and lumbar puncture were demonstrated upon the cadaver. Lumbar puncture was also demonstrated in the case of suspected tuberculous meningitis previously mentioned.

No new ideas were advanced regarding the anemia cases seen. I might however, say that the intra-muscular injection of citrate of iron is often used.

One boy was seen in the early stages of hip-joint disease. This boy complained of pain in one knee and had been treated for the knee. This reminds us to be careful in these cases, making a thorough examination, the referred pain not being uncommon.

Several other cases of joint conditions were presented for diagnosis, some proving to be syphilitic, others tubercular.

Cases of hydrocele, umbilical hernia, inguinal hernia, furunculosis, influenza and ringworm were seen, but the treatment did not present anything new or striking. Neo-salvarsan was being tried out with some success in infants and children, but there is a tendency to be satisfied with the old style treatment.

I saw one infant with a fracture of the shoulder, this having occurred at birth. A fractured clavicle was seen in an older child.

At the German hospital I saw a boy of ten years with splenic anemia, the spleen reaching to the iliac crest.

One line of cases of much interest to me and they should be to you all, these are the feeding cases. A great many of these were seen at different institutions, especially at the out-patient departments. In general there is but little change in method of treatment from last season, some few physicians favoring slight variations of the general method. I was much impressed with the feeding cases, in particular the number of breast babies at the hospital out-patient department under the supervision of Drs. Haynes and Moffitt. In the routine instruction there seems to be too much time spent in artificial feeding and too little on breast feeding.

Three cases of Mongolian idiocy were seen at different places. These mentally defective children offer a broad field for further investigation, A further study of metabolism will doubtless give new light on this subject.

Peters* has recently shown that in these Mongolians there is a diminished calcium excretion.

Dr. Irving S. Haynes has in several cases of internal hydrocephalus performed an operation with a view to permanent drainage. This may be of benefit when internal hydrocephalus is present in Mongolian idiocy. This operation consists of trephining midway between the foramen magnum and the occipital protuberance, exposing the termination of the longitudinal sinus. The cisterna magna is connected with this sinus by means of a silver cannula, this being held in place by sutures, leaving a continuous drainage of the cisterna magna.

There were doubtless many other cases of interest that it was my privilege to see during this two weeks' period.

While my remarks have been confined to the children's clinics I feel confident that one may find an abundance of material in any line he may be interested in.

I am not certain that I have given you many ideas in these rambling remarks but I think you will agree with me that New York has an abundance of clinical material. If I have brought any new thought to you or have created in you a desire to do more post-graduate work I am satisfied.

*A. W. Peters, The Training School Bulletin, Vine-land, N. J.

EARLY MEDICINE.*

BY

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If one must speak of the very earliest medicine, it is necessary to include primitive man. In fact, LeClerk in the History of Medicine, published in 1723, makes this remark:

"The first man was in a certain sense the first physician," and from Adam down there is no doubt but what primitive man has in his crude way attended his wounds; he has also adopted the rest and diet cure, impelled by his natural feelings to lie down when sick and to reduce his diet on account of lack of appetite.

But so far as any records are concerned, all is chaotic until we come to the time of Egyptian antiquity. Speaking of this age Herodotus writes:

"Doctors received their salaries from the treasury; but they were obliged to conform in the treatment of a patient to the rules laid down in their books, *his death being a capital crime, if he was found to have been treated in any other way.*"

What these rules were we do not know. Even at this time in Egyptian antiquity the practice of medicine was inferior to that of the Greeks. Herodotus quotes another incident where King Darius jumping from his horse broke his ankle, what is now recognized probably as a Pott's fracture. The Egyptian surgeon following rules already mentioned subjected him to great pain but without reducing the fracture, until finally Darius sent over to the Greeks and summoned one Democedes, a slave who was skilled in medicine, and we read:

"However, Darius put himself under his care, and Democedes by using the remedies customary among the Greeks, and exchanging the violent treatment of the Egyptians for milder means, first enabled him to get some sleep, and then in a very little time restored him altogether, after he had quite lost the hope of ever having the use of his foot."

These, however, are only single instances mentioned during a period of many generations. It is from Greek mythology that we really must date the history of medicine in the person of

Aesculapius. How much of the life and work of Aesculapius is fact and how much fiction is impossible to state; however, the Greeks believed in him as a real man and deified him. For instance, Pliny says:

"Some suppose that Achilles cured Telephus by the plant called Achilea, others think that it was by verdigris, which is much employed in plaisters and for this reason they add that Achilles is painted scraping the verdigris off the point of the spear into the wound of Telephus."

And from this it appears as a fact that Achilles treated the wound of Telephus, but as the narrative goes on we find the mythological factor more prominent. Telephus was a grandson of Arkas, and of Arkas we read:

"The beautiful Callisto, companion of Artemis (Diana) in the chase, had bound herself by a vow of chastity.; Zeus (Jupiter) either by persuasion or by force, obtained a violation of the vow, to the grievous displeasure both of Héré (Juno) and Artemis. The former changed Callisto into a bear, the latter, when she was in that shape, killed her with an arrow. Zeus gave to the unfortunate Callisto a place among the stars, as the constellation of the bear; he also preserved the child Arkas, and gave it to the Atlantid nymph Mena to bring up."

Is the whole story fact or fiction?

It was in Arcadia, the land of Arkas, that Aesculapius was born, and in his pedigree are recorded these names: "the wide-ruling offspring of Cronos," "the son of Uranos, the wild centaur who ruled in the glens of Pelion." It was such as these who "bred Aesculapius the gentle artificer of freedom-from-pain, that strengthens the limbs, the demi-god that wards off diseases" (Homer).

Pindar in the third Pythian ode sings of the birth of Aesculapius, the son of the nymph Coronis and Apollo, the vengeance of the gods and the saving of the infant and his abode at the retreat of Chiron, "the justest of all the centaurs." Here he learned the healing art and again in the words of Pindar, "So he rescued those who sought his abode, some from sores of spontaneous origin, some from wounds inflicted by the gleaming brass, or the far-hurled stone, some whose frames were wasted by the summer's fire or winter's cold. The gentle charm gave relief to some; to others he administers the soothing potions or round their limbs he bound the plaster made from herbs; while others again,

*Read before the Chittenden County Clinical Society.

he restored to health by cutting off the limb."

Aesculapius was deified and worshipped by the Greeks along with other mythological gods, as the god of medicine. Temples were erected to him in many places, one of which is of special interest, that at Cos, because here later we find his descendant Hippocrates. The whole story of Aesculapius is so involved in the Greek mythology that whether he actually lived and practiced the healing art, or whether in the mind of Homer and other Greeks he was the deified personification of what they conceived to be the God of medicine, is of course an uncertainty. It is recorded more with the appearance of truth and accuracy that he had two sons, Machaon and Podalirius. Both the sons were trained in the healing art and both were naval leaders.

"All who in Triikka dwelt, and in Aechalia, the city

Of Eurytus the Aechalian, and many-knoll'd Ithone;

Two sons of Aesculapius, Podalirius and Machaon,

Excelling in the healing art, were over these the leaders,

And thirty smoothly-hollow'd ships were ranged beneath their guidance."

Machaon thus indeed served the double office, for not only as a valiant leader was he eminent, but also when Menelaus the brother of Agamemnon was wounded by the arrow of Alexander, great excitement prevailed.

"But when they came where auburn Menelaus Was wounded, and in circle thick

Around him all the noblest

Were gather'd, and midst of them

The godlike man was standing;

First would Machaon pull the shaft

From the well-fitting girdle,

But that the pointed barbs were snapt and tangled as he drew it.

Then from his waist unfasten'd he the girdle all embroider'd,

The sash, and baldric underneath,

Which smiths of copper labour'd.

But when he saw the wound, wherein lighted the stinging arrow,

He suck'd from it the blood, and spread within it mild assuagements,

Which friendly-hearted Chiron once unto his sire imparted."

And farther on we have still another tribute to both the skill and value of Machaon.

"O Nestor, Neleus' progeny, great glory of the Achains,

Haste, mount upon thy chariot; beside thee take Machaon,

And quickly to the galleys drive the single footed horses;

Surely a sage chirurgeon, skilful to cut out arrows, And overspread assuagements soft, *hath many fighters' value.*"

This is the last we know of Grecian medicine up to the time of the Peloponnesian war, and Pliny in his writings recognizes this hiatus in medical history:

"Strange to say, it was concealed in *thickest night* from the time of the Trojans to that of the Peloponnesian war." "A Trojanis temporibus, mirum dictu, in nocte deneissima latuere usque ad Peloponnesiacum bellum."

Previous to the time of Hippocrates Greek mythology had become more of a demonology. The Greek gods were no longer worshipped or revered and Diagorus sitting in front of the fire which was nearly low, grasped the wooden statue of Hercules and threw it on the fire, saying, "Bravo, Hercules, this is the thirteenth and last of thy labours." And generally speaking, the reverence for Aesculapius was doubtless no better than was that for Hercules.

The next era in medicine begins with the age of Hippocrates born 460 B. C. Hippocrates is given as a lineal descendant from Aesculapius through the son Podalirius. Hippocrates cannot be called the father of medicine, because his system was so far from the truth as we now conceive it; better to call him the grandfather or great-grandfather as his great work was more to pave the way for modern medicine than to establish it.

Hippocrates was born at Cos where one of the temples of Aesculapius was erected, and growing up in the immediate neighborhood he was permeated more or less by medical atmosphere. Hippocrates was sent away to school to Thrace and here taught by Herodicus a man somewhat similar to Weir Mitchell of our day, who seemed to have maintained a sort of sanatorium with very rigid discipline for his patients in regard to exercise, diet, etc. Later, he became a pupil of Democritus, a sort of a living encyclopedia of learning. Later, he returned to his native city.

Hippocrates was born at the same time as Apelles the painter, and grew up in the artistic atmosphere of Greece. Reverence for the Greek

gods had largely disappeared and Hippocrates instead of reverencing the past became a keen observer of the present. In fact, his powers of observation were unusually acute and some of his descriptions of symptoms are still classics. For instance, as he describes a dying face, "A sharp nose, hollow eyes, collapsed temples; the ears cold, contracted, and their lobes turned out; the skin about the forehead being rough, distended, and parched, the colour of the whole face being green, black, livid, or lead-coloured." This is still known as a *Hippocratia facies*, and is the term found in many standard works on medicine today.

Previous to Hippocrates, disease was looked upon as a stroke of the demon, as the following quotation in regard to epilepsy taken from Aretaeus shows: "There is a sort of ignominy, too, in its character, for it seems to attack those who offend the moon, and hence the disease is termed 'sacred' as it may be from other sources, either from its magnitude (for what is great is sacred), or from the cure not being in the power of man, but of God, or from the notion that a demon had entered into a patient, or from all put together, that it has been so called."

In contrast to this, Hippocrates has this to say of epilepsy: "It is thus with regard to the disease called sacred; it appears to me to be in no wise more divine or more sacred than other diseases, but has a natural cause from which it originates, like other affections. Men regard its nature and cause as divine from ignorance, and wonder because it is not at all like other diseases—But if it is to be reckoned divine because it is wonderful, instead of one there are many diseases which would be sacred And they who first referred this disease to the gods appeared to me to be just such persons as the conjurers, mountebanks, and charlatans now are, who give themselves out for being excessively religious, and as knowing more than other people. Such persons, then, using the Divinity as a pretext and screen of their own inability to afford any assistance, have given out that this disease is sacred."

Hippocrates' views were not accepted for many centuries and five hundred years later Origen of the Church writes: "It is demons which produce famine, unfruitfulness, corruptions of the air and pestilence. They hover, concealed in clouds, in the lower atmosphere, and are attracted by the blood and incense which the heathen offer to

them as gods." And also Augustin says, "All diseases of Christians are to be ascribed to these demons; chiefly do they torment flesh-baptized Christians, yea! even the guiltless newborn infants."

To Hippocrates are ascribed many wonderful cures, and his reputation as a physician was widespread, but it is his influence upon medical thought that stamps him as the great man of his time in medicine, for it was he who first wrote clearly and plainly in regard to the more rational explanation of disease as contrasted with that of Greek mythology. He rose above superstition and observed facts so far as he was able. To this must be added his high moral sense. Previous to his time there are inklings in the literature of men being cured of disease only upon the payment of fabulous sums. The oath of Hippocrates establishes a high ideal for the physician, and this, too, still stands as a well known classic.

"I swear by the physician, Apollo, and Aesculapius and Hygaea, and Panacea, that, according to my ability, I will keep this oath and this stipulation I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to any one if asked, or suggest any such counsel. With purity and holiness I will pass my life and practice my art Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and further, from the seduction of females or males, of freemen or slaves. Whatever, in connection with my professional practice, or not in connection with it, I see or hear in the life of men which ought not to be spoken of abroad I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath inviolate, may it be granted to me to enjoy life and the practice of the art, respected of all men in all times; and should I trespass and violate this oath may the reverse be my lot."

For all of this Hippocrates was accused of crime. The library at Cnidus burned and Hippocrates was accused of setting the fire to cover up his theft of valuable books taken for his own gain, and escaped the gallows only by flight.

In the works of Galen the following quotation is found, which Galen attributes to Hippocrates: "In the universe there are four elements—fire,

air, water and earth; and in the living body, there are four humours—black bile, yellow bile, blood and phlegm. Out of the excess, or deficiency, or misproportion of these four humours there arise diseases; by restoring the correct proportion, diseases are cured."

And it is upon this basis of the four humours that medicine rested for many centuries. Treatment of diseases rested upon this same foundation of the four humours just as today treatment rests upon our knowledge of anatomy and function as we today understand it. The acid drink which we use today in fevers and other diseases and with benefit, is explained by Hippocrates in these words:

"In a word, the acidity of vinegar agrees rather with those who are troubled with bitter bile, than with those whose bile is black; for the bitter principle is dissolved in it and turned to phlegm by being suspended in it."

Hippocrates' views of medicine are almost ludicrous from our present standpoint, but if we only realized that he viewed disease without knowledge of the normal functions of the human body, we can better understand his greatness.

The next great name in medicine is that of Galen, born A. D. 131. The records of medicine from the time of Hippocrates to this date are meager. Disease was looked upon as a visitation from God by the Christians, or from the Divinity in the case of the followers of the other religions. The art of healing was largely practiced by Church men. St. Luke appears as the beloved physician, and the healing of all manner of diseases was a large part of the work of Christ, and from Christ's time on to that of Galen the practice of medicine still continued to be one function of the clergy.

Galen stands preeminent as the early medical writer. Previous to his time the literature is made up only of selections gathered here and there. Galen wrote largely, his works consisting of two hundred treatises, a large proportion of which were devoted to medicine. He was bound by precedent, and so far as possible carried out the earlier ideas of Hippocrates. A few of his cures are described in the literature, and his fame as a surgeon seems to have been quite extensive. Galen was the first to divide the causes of disease into the remote and proximate, or predisposing and exciting, a classification which is still in use; the remote cause being some influence modifying the condition of the patient and the

exciting cause being the immediate agent producing the disease. It was of great interest to the ancients to solve the mystery of the soul. Galen states that it resides in the brain and that the spirit or pneuma gains access to the soul through the various small apertures in the skull, chiefly those from the roof of the nose to the base of the brain, and remedies were used based upon this idea, and sneezing was often excited by the ancients as a means of refreshing the soul. He also conceives that the spirit is contained in a physical way within the body of the eye and receives and interprets the rays of light. Most interesting of all is Galen's theory of disease, or what we call pathology. For instance, he divides inflammation into the following kinds:

"1st. The simple, which is caused by excess of blood alone in any part. 2nd. When pneuma enters along with the blood. 3rd. When yellow bile gains admission, it is erysipelatous. 4th. When phlegm, it is scirrhus or cancerous.

Galen lays great stress upon the observation of the external symptoms as indeed was necessary from their lack of knowledge of the inner workings of the body. For instance, the pulse he classes under twenty-seven different varieties based upon its quality, as for instance, long, broad, high and large; long, moderate, high, etc. Also his remedies were classified by their inherent heat and coldness, dryness and moisture, and medicines were described, as for instance:

"Fennel is heating in the third degree, and desiccative in the first; it therefore forms milk, and relieves suffusions of the eye."

Galen wrote extensively concerning anatomy and his descriptions of the bones and muscles, tendons and nerves were very accurate, as indeed they might be. He held the erroneous views of the circulation as well as the action of most of the organs of the body, and his greatness and fame rest not upon his keen powers of observation of new discoveries, but upon his reducing the experiences of the men of the past centuries to writing. His writings were preserved and were authority for the practice of medicine for many centuries afterwards.

Avicenna, born 978, died 1036, A. D., the best known of Arabian physicians. Avicenna preserved the literature and knowledge of the Greeks; and was well versed in the writings of Galen, and his medical system differs in no way from Galen's. Moist and dry, hot and cold were the characteristics of disease, and remedies

were classified accordingly, moist remedy being used to cure a dry disease and vice versa.

Dioscorides of the 15th century, a Cilician, was another of the extensive writers. Galen wrote of the entire practice of medicine; Dioscorides of its *Materia Medica*. His works comprise a complete encyclopedia, and for centuries it was believed that every known plant in Europe was listed and described in his works. His language was ambiguous; his drawings were rude, and it was very easy to find in his writings a description which would fit any known plant. Each drug is described minutely as to its dry and moist, hot and cold qualities, and the disorders for which it is to be used. He also gives many prescriptions, one of which, a favorite in the middle ages, went by the name of Theriacum, comprising sixty-six ingredients of seeds, roots, flowers and earths, which was used for the following conditions:

1st. It was to be taken twice a day for seven years by those bitten by venomous animals, or who had taken poison.

2nd. It was to be taken by people in a dangerous state from some obscure cause resembling poisoning.

3rd. For coughs and pains in the chest.

4th. In Hemoptysis.

5th. For flatulence, tormina, and celiac affections.

6th. It removes rigors, coldness, and vomiting of bile.

7th. It promotes menstruation.

8th. For loss of voice.

9th. For diseases of the liver.

10th. For diseases of the spleen.

11th. For cancerous affections of these organs.

12th. For nephritic complaints.

13th. For dysenteric attacks.

14th. For dimness of vision.

15th. It is also used as a dentifrice, and many take it at new moon after digestion, for the sake of prophylaxis." A description barely rivaled today by the claims of some of our famous panaceas.

Paracelsus, one of the greatest characters in medical history, is the pioneer in attacking the old system and building the new. Personally, he was a choice specimen, a beardless, eccentric individual, even the sex of whom is still a matter of doubt,

and yet combined with keenness and ingenuousness.

Zimmermann described him thus: "He lived like a hog, looked like a carter, found his chief pleasure in the society of the lowest and most debauched of the rabble, was drunk the greatest part of his life, and seemed to have composed all he wrote in this condition." He was born in the year 1493, and called himself Philippus Aureolus Theophrastus Bombast von Hohenheim, Paracelsus for short. Paracelsus did not receive any systematic education but was a Continental tramp, extending his travels into Asia and Egypt. Penniless during his travels, he supported himself by quackery and necromancy, the selling of wonderful cures and bargaining for certain secrets which he claimed to possess. Keen, observing, watching the preparation of metals in various mines, and making a study of their medical virtues, cynical in his make-up, he seemed to have looked for material with which he could overthrow the old system of Galen. He practiced medicine, and his cures were famous like that of many others and through his fame as a healer he was sent for from all over Europe. When thirty-three years of age he boasts of having cured thirteen princes, each of whom had been given up by the old Galenic practice. In 1526 he was appointed professor of Physic and Surgery at the University of Basle. His first act on receiving his professorship was to throw the works of Galen and Rhazes into the fire. "A physician," he says, "must be a traveler. If a man wishes to learn much of disease, let him travel far; if he do so, he will acquire great experience. Reading never made a physician—only practice." He refused to teach in the accepted Latin tongue and used colloquial German, and seemed to set himself against all well established ideas and customs.

The last two years of his professorship Paracelsus was said to have been drunk every day and never to have undressed himself. Finally, having cured a Church man on the agreement to pay a fee of one hundred florins, he gave him three laudanum pills, the canon was cured and then refused to pay more than the usual fee. Paracelsus took him into court, lost the case and was expelled from the university.

Paracelsus' professional ethics were marked by their absence, making a clean cut bargain beforehand for his cure and refused his services until

he had exacted the promise of the highest possible fee. In fact this method of preying upon the misfortune to the sick and dying seems to have been common at times through all of the early centuries.

Paracelsus attacked the old Hippocratic and Galenic theory; he burned their books and absolutely rejected their entire teaching. "What you call humours are not diseases"—the disease does not consist in deficiency or excess of black or yellow bile—"that is the disease which makes these humours. How can a physician think to discover the disease in the humours, when the humours spring out of the disease? It is not the snow which makes the winter, but the winter the snow; for although the snow is gone, the winter remains. You mistake the product of disease for disease itself." And again he says, "The whole design is false, there is no proof of a disease being hot, or a remedy being cold." Paracelsus not only attacked the prevailing system, but he ridiculed it so effectively that it was hard to stand up against him. He says, "Can you cure the gout, or the plague, or any other disease in this way? Certainly not." And again, "Open one of their herbals (books on herbs), and you will there find how one herb has fifty or one hundred virtues; that it will cure so many forms of disease. But open their receipt books, and you will find forty or fifty such herbs in one receipt against one disease."

Blood-letting was one of the commonest measures of his time, and much stress was laid upon the time when it should be done, the influence of the planets being supposed to be very great. Paracelsus says, "Go to a battle-field and you will find many men wounded under the same position of the heavenly bodies, but how differently does it fare with them! Would this be so if the stars controlled the effects of blood-letting?"

Paracelsus ridiculed the so-called humours of the body as being the cause of disease, and his sarcasm was effectual, but his own ideas were no better. Disease was to him a sort of evil spirit; composed out of three coefficients, which he called salt, sulphur, and mercury. He says: "Salt gives form and colour to all creatures. Sulphur gives body, growth, nutrition, etc., and these two are the father and mother which beget all creatures with the help of the stars; that is, sun and moon by sulphur and salt bring forth mercury. Mercury, however, when born, requires

for its daily growth and nourishment, the presence of sulphur and salt."

Paracelsus was a student of the crude chemistry or alchemy of his day. It is hard for us to understand just what their views were. A quotation from Paracelsus illustrates the chaos of their ideas: "The third pillar of medicine is alchemy; not that alchemy which makes gold and silver (for these blockheads swarm in all countries), but the alchemy which instructs us how to separate each *mysterium* into its own *reservaculum*."

And as has been said before, Paracelsus railed against the old accepted theories of his time, and it was easy for him to do so. They were absurd and he could ridicule them to his heart's content, and no one would be able to defend them. He stands high as the man who undermined the old theories, but as a contributor he did not accomplish much. He built up a system of his own, but it is not intelligible. He has a vocabulary of his own, difficult to translate, and one writer explains that he dictated to someone that was ignorant both of the subject and of the language, and the fact that he accomplished all of this while in a state of chronic intoxication makes it a wonder that he did as well as he did. Paracelsus destroyed the old, but created nothing new.

Paracelsus' views of the physician as a man were a great advance over those of Galen. Galen had studied the literature of the past ages, and had gathered the experiences and traditions together into his extensive writings. He believed that a physician must read extensively and learn the books; that if he did this thoroughly and well, then his practice of medicine would be infallible. Paracelsus had no respect for previous writings or the so-called authorities of the past, but insists that the physician must have a natural, or rather preter-natural gift to be kept alive and responsive to nature. He must know disease at a glance by a process of intuition, and tell with equal facility and certainty what plant or mineral will subdue it.

Paracelsus by the continued striking of blow after blow for his entire lifetime, finally demolished the ancient superstructure of medicine, and so made preparations for those men who immediately followed him, Vesalius and his pupil Fallopius for Eustachius and Sylvius, and for Ambrose Pare, to lay the foundations for a new structure by more modern means of investigation. The lives of these five men, in fact, make an interesting study by themselves.

COMMON DUCT OBSTRUCTION.*

BY

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Up until very recent years the upper abdomen might well have been the called the area of diagnostic romance. Not only the importance of the organs there situated, their close proximity, interdependence of function and commingling of symptomatology in disease but also the proneness of lesions elsewhere, both general and abdominal, to refer their troubles to the stomach and upper abdomen as spokesman, combined to create a confusion of clinical ideas which awaited the era of living pathology as revealed by the aseptic scalpel to dispel the mysteries and reveal the truth.

In the general development of our understanding and therapeutics of this important area no chapter has been more fascinating than that which deals with the biliary tract. As Maurice Richardson so well said, "no field of abdominal surgery presents greater difficulties; and none, on the whole, permits greater successes." In the hurry and worry of active life we come to regard the modern miracles of healing as commonplace, but in truth what greater magic can be conjured up than cunningly to surmise the cause of the fevered, pain stricken, jaundiced sufferer, knowingly to seek the stone in the common duct, skillfully to remove it, and happily to observe the return to health. Today, therefore, I invite you to sail with me down the common duct, not on the even flow of a clear untroubled stream but in a muddy channel blocked with various obstacles.

Obstruction of the common duct if complete is always accompanied by jaundice, but jaundice on the contrary may be present in many conditions in which no obstruction of the common duct exists. When absence of biliary pigments in the feces is demonstrated in connection with jaundice the diagnosis of common duct obstruction is practically assured. Clay colored stools are as a rule significant of the absence of bile in the intestine. It should be noted, however, that such stools owe their peculiar color and consistency rather to the high content of fat and fatty acid crystals than to the absence of biliary coloring matter. We may therefore at times by chemical means demonstrate the presence of ster-

cobilin in the clay colored stool. In this case we may not be correct in assuming obstruction of the common duct since the failure to digest properly the fats in the diet may be due to some other cause, notably pancreatic insufficiency. In intermittent jaundice of obstructive type naturally the alteration in the character of the stools goes hand in hand with the deepening or lessening of jaundice and in partial obstruction of the duct the degree of jaundice and fecal acholia present a marked parallelism. It must be said that in cases of non-obstructive jaundice the amount of bile poured into the intestine may fall through failure of the secretory power of the liver parenchyma, but in general the conjunction of jaundice and alcoholic stools is the most important sign of obstruction of the lowermost biliary passage. These signs when interpreted in connection with the clinical history and subsidiary signs and symptoms will enable one in almost every instance to distinguish the jaundice of common duct obstruction from other varieties. Those conditions which are not infrequently characterized by jaundice without extrahepatic obstruction of the ducts may be briefly enumerated as cirrhosis and other diffuse diseases of the liver; many infections, such as the different types of so-called infective jaundice, syphilis, yellow fever, septico-pyemia, malaria, pneumonia, typhoid fever, etc.; intoxications, such as poisoning with ptomaines, phosphorus, toluylenediamin, pyrogallol, snake venom, coal-tar products, etc.; acute yellow atrophy of the liver; in progressive pernicious anemia and hemoglobinemia; disturbances of the circulation, such as passive congestion; certain nervous perturbations (so-called emotional jaundice, menstrual jaundice, etc.) "jaundice of the newborn" (Kelly) and still other rarer conditions.

Our first difficulty in the consideration of obstructive jaundice, therefore, relates to the determination of the actual existence of obstruction in the extra-hepatic ducts. The second and greater difficulty is the diagnosis of the cause of obstruction.

In obstruction of the choledochus we meet with two distinctive types of jaundice. In one class of cases jaundice is ushered in by pain. It begins suddenly and increases rapidly, reaching its maximum within a few hours or a few days. Often it recedes and disappears as rapidly as it came. In other cases it remains constant for a few days or a few weeks before recession begins. Then it

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diminishes gradually, never entirely disappearing, but at times again increasing and falling at more or less irregular intervals for a period of months or years if its course is not disturbed. This is the painful fluctuating type of jaundice and its two chief causes are stone or stones in the common duct and chronic pancreatitis.

The most common cause of common duct obstruction is gall-stones. Gall-stones are the result of infection of the biliary passages, and infection is the expression of microorganismal invasion. A gall-stone therefore has been well defined by Moynihan as "a tombstone erected to the evil memory of the germ which lies dead within it." Gall-stones are formed in the gall-bladder in practically every instance and reach the common duct only after migration through its outlet, the cystic duct. They derive their chief importance from their unhappy faculty of wandering, for a gall-stone at rest in the gall-bladder is, relatively, a harmless object as compared with its evil actions in the common duct. The stay-at-home gall-stone is not agreeable but he is tolerable, the travelling gall-stone is unendurable. It is for this reason, we may observe in passing, that no gall-stone should be allowed to travel if his intention is suspected. This may be prevented by removing him backwards from the gall-bladder before the disastrous forward movement is effected. This is in line with the modern trend of thought, namely, prevention, and there is no question but that the removal of gall-stones just as soon as symptoms arise and while they are still in the gall-bladder, would result in a great diminution of sickness, suffering and death. Towards this desirable end we should all work, but as yet the profession, as well as the laity, are not willing to advise nor to submit to the preventive operation, and so it is that we find a large percentage of cases of stone in the common duct at operation.

In 606 of my cases analyzed for this purpose, 21% had stones in the common duct.

Chronic pancreatitis produces jaundice by compressing the common duct as it passes through the head of the pancreas in much the same manner as the enlarged prostate causes retention of urine by pressure upon the urethra. The common duct is completely enveloped by the pancreas in some portion of its course in approximately two-thirds of all cases. In the remaining third it occupies a groove on the surface of the pancreas,

in which case it is exempt from pressure by the swollen pancreatic head.

Not infrequently both these causes, namely, stones in the common duct and pancreatitis, will be found acting together in the obstruction of the common duct. The dependence of pancreatic inflammation upon disease of the biliary passages is one of the more striking recent advances in knowledge gained through the surgical autopsy in vivo. Evidences of pancreatic inflammation are found by surgeons in from 30 to 60% of all cases of gall-bladder and common duct disease with or without stones. Opie has shown that the pancreas may become the seat of pancreatitis by the retrojection of bile into the pancreatic duct which ensues when the papilla of Vater is occluded by a small calculus, thus forcing the bile coming down the common duct into the duct of Wirsung through the medium of the ampulla of Vater, into which both empty in over ninety per cent. of cases. Such a contingency usually results in the more acute hemorrhagic form of pancreatitis, one of the great abdominal catastrophes.

More recently it has been suggested by Arnsperger, and observed by Pfeiffer and myself that the lesser grades of inflammation, particularly of the head of the pancreas depend upon the intimate connection between the lymphatics of the gall-bladder and common duct and those of the head of the pancreas. The lymphatic vessels of this portion of the biliary tract in large part pass directly over the head of the pancreas where they anastomose with its efferent lymphatics. Laden with infection, as they are in gall-bladder and common duct disease, the inflammation is by this path transmitted to the head of the pancreas, the tail of the organ often remaining uninvolved because of its separate lymphatic supply. Thus it is common to find chronic pancreatitis associated with lithiasis of the common duct and the two causes uniting to impede the outflow of bile.

It is most noteworthy that both the common causes of fluctuating jaundice are dependent upon infection and therefore present many inflammatory phenomena. Chronic pancreatitis is the direct result of the invasion of the pancreas by pathogenic micro-organisms. Gall-stones are the result of infection, but more than this, the fluctuation of symptoms in these cases is due chiefly to subsidence alternating with exacerbations of the inflammation. The simple mechanical theory of the ball-valve stone slipping backwards and

forwards in the common duct no longer suffices to explain more than an occasional case of fluctuating jaundice. Single stones are more commonly quite firmly fixed in position and they are found well distributed along the duct. Courvoisier found the stone in an analysis of 123 cases:

At the commencement of the duct in 17 cases.

In the middle portion in 19 cases.

In the retroduodenal portion in 25 cases.

At the ampulla of Vater in 41 cases.

Scattered along the entire common duct in 25 cases.

It has become clear that the alternations in the degree of obstruction depend chiefly upon inflammatory swelling of the duct and its enveloping tissues due directly to the infection and secondly to irritation of the calculi as an exciting cause.

The evidences of infection are, therefore, essential elements in the diagnosis of these two conditions. Fever, chills, sweats are part of the well known syndrome of common duct stones as pointed out by Charcot and in greater or less degree are present in all cases of obstruction of the common duct by these causes. Leucocytosis fluctuates with the toxemia. When active infection is absent it is common to have few or no obstructive phenomena although one or more stones may be present in the common duct. In about one-quarter of the cases of common duct cholelithiasis discovered at operation no history of jaundice could be obtained.

By way of exception fluctuating jaundice of obstructive character may be caused by the presence of movable tumors without, such as a movable or otherwise pathological kidney. In such cases inflammatory phenomena are absent and the diagnosis rests upon physical examination or exploratory operation.

The second type of jaundice begins insidiously, without pain, or at most with but slight discomfort. By almost imperceptible degrees it advances until in a few weeks there is an intense greenish black discoloration of the skin. The urine is laden with bile but the stools show no trace of bile pigment. The weeks go by but no diminution of jaundice occurs. Compared with the sufferer from the painful fluctuating type of jaundice, the victim of the second type is comfortable. There is intense itching of the skin and, often, digestive disturbances, but as a rule, a languid apathy appears and becomes more marked

with the failure of appetite and loss of weight and strength. Rarely, except in the later stages, are inflammatory phenomena, pain, fever, chills, and sweats a part of this syndrome.

This type of painless progressive jaundice is due most often to compression or occlusion of the common hepatic or common bile duct by cancer. Most often it is carcinoma of the pancreas. Rarely it will prove to be a growth of the ampulla of Vater or of the common hepatic, cystic or common duct. Occasionally secondary deposits from gastric carcinoma will occlude the duct, though this is rare. In general it may be said that the more insidious the jaundice the more free from present discomfort or previous history of disturbance of the biliary tract the more gloomy is the prognosis.

In a few cases this picture of malignant jaundice may be simulated by obstruction due to the sequelae of previous inflammation of the biliary tract or its surroundings. Rarely the sclerotic head of the pancreas in chronic indurative pancreatitis will reproduce the unremitting pressure of carcinoma. Stricture of the common hepatic or common duct due to previous ulceration may become impermeable and give all the symptoms of complete obstruction. A large stone impacted in the cystic duct may be forced down upon the common duct by the hydrops of the gall-bladder, thus generated so tightly that the flow of bile is completely stopped. Cicatrization of a duodenal ulcer may occlude the papilla of Vater. After operation upon the common duct, adhesions may angulate the duct or compress it to the point of occlusion. These rare conditions furnish the ray of hope in this progressive painless type of jaundice which is so often due to cancer. Ordinarily cachexia is more marked in malignant disease than in the benign conditions which simulate it, but the loss of weight and strength may be extreme even in benign obstruction of the choledochus.

The behaviour of the gall-bladder is often a most helpful aid in the diagnosis. As stated by Courvoisier, enlargement of the gall-bladder in obstruction of the common duct is indicative that the obstruction is due to causes other than stone. The cause for this is apparent when we consider that the normal gall-bladder is elastic and distensible, while in the gall-bladder that has been the seat of inflammation the walls are thickened, sclerotic and inelastic. In some cases contraction of the fibrous tissue has reduced the organ greatly

in size. Gall-stones presuppose infection of the gall-bladder which in turn implies thickening, sclerosis and loss of elasticity. Therefore the backward pressure which comes from blockage of the common duct is unable to cause enlargement of the gall-bladder. Moreover, as already stated, the obstruction due to gall-stones is intermittent and allows periods for the gall-bladder to recover from the backward pressure and resume its normal size.

In obstruction other than stone it is likely that the gall-bladder is still delicate and distensible, therefore it yields to the backward pressure of the bile and can often be felt through the abdominal wall.

Infractions of Courvoisier's law are seen in five to ten per cent. of the cases. They are due usually to a conjunction of lesions of the gall-bladder with others affecting the common duct whereby the usual tendency is annulled. Thus a thickened sclerotic gall-bladder will not dilate even though the common duct be absolutely obstructed by chronic indurative pancreatitis or by carcinoma of the pancreas or bile ducts. On the other hand if a stone be impacted in the cystic duct it will dilate, as a result of the secretion of mucus by the gall-bladder itself, producing the well known hydrops of the gall-bladder. This condition may coincide with obstruction of the common duct by the stone impacted in the cystic duct or with stricture or stones in the common duct antedating the impaction of the cystic duct calculus. Still another exception may be found when the tissues of a chronically diseased gall-bladder are softened by acute inflammation permitting distension by even slight backward pressure such as from stone in the common duct or other cause.

The physical findings therefore must always be interpreted in the light of the history and the pathological condition which we can picture as the result of the morbid processes.

There is but one type of common duct obstruction in which operation is not indicated, namely, advanced malignant obstruction. For the comfort of the patient and the good name of surgery it is always well to refuse operation in cases which are manifestly incurable. Marked cachexia and anemia, a palpable abdominal mass possessing the characteristics of carcinoma, evidences of metastases to the liver as shown by enlargement of the liver and palpable nodules upon its surface, pelvic implantation metastasis as felt by the rectum, ascites together with the black unremit-

ting jaundice of long continued absolute obstruction bespeak a hopeless prognosis. Mere exploration is frequently fatal in these cases and though the surgeon may comfort himself in the knowledge that the patient is thereby saved from the distressing terminal stages of this condition, I have never felt that the surgeon should constitute himself the Lord High Executioner. The only exception I would make is in the case of operation for intolerable symptoms where it is clearly understood by the patient and the family that the operation is for the relief of distress only, and that it entails a considerable danger with no hope of ultimate cure.

Yet it is necessary to be most cautious in abandoning these cases to a hopeless prognosis since an occasional case will be met with which has many of the ear marks of malignancy and yet prove to have a remediable benign condition. When a possible chance exists the patient should have the benefit of exploration if nothing more. These remarks are based upon conditions as we find them and not as they should be. If the proper advice were given and followed, all victims of common duct obstruction would be operated upon at an early season before the secondary characteristics of malignancy permit of certain diagnosis and before the sequels of non-malignant obstruction make the operation more hazardous. In the early stages of malignant disease it is sometimes possible to attempt the eradication of the disease, or if this is impossible a short circuiting operation may be done by which the jaundice is relieved, and life prolonged and made more comfortable. In the early stages of non-malignant obstruction the nutrition of the patient is better and his resistance greater than after a prolonged period of struggle against the absorption of bile and the toxic products of inflammation. Many fear to operate in the acute stage of common duct obstruction. Mayo reports an operative mortality of 25% in such cases. The majority of surgeons recommend that the acute attack be treated medically until remission occurs. Our own experience, however, forces us to the conclusion that in the long run immediate operation during an attack of acute obstruction of the common duct is attended by less danger than is delay. Operation during complete obstruction may be forced upon the surgeon sometimes by signs of perforation or peritonitis; but few such patients will be rescued. If operation is delayed the patient runs the risk of cholangitis, cholemia,

and sepsis, not to mention perforation of the duct or the formation of almost inoperable adhesions.

Early operation avoids one of the most unpleasant complications of chronic jaundice, namely, the uncontrollable oozing that often proves fatal. The cause of the pseudo-hemophilia of jaundice has been the subject of much theory but little is actually known regarding it. When hemorrhage is to be feared the patient should be given a preliminary course of calcium chloride or lactate and one or more hypodermic injections of animal serum before operation. Calcium is employed because of the well known important role it plays in normal coagulation of the blood. Unfortunately it does not prove to be a specific in the pathological condition. Animal sera also are known to increase the coagulability of the blood in certain conditions and seem to be of some use in hemorrhagic jaundice. These also are not entirely efficacious and there is danger of producing serum sickness or anaphylactic shock. Human serum is less objectionable in this respect and direct transfusion of blood may be recommended as probably the most effective means of combatting post-operative oozing.

The operations to be employed in common duct obstruction will vary much according to the pathology. The first step is to locate the common duct. Often it will be necessary to dispose of pericholecystic adhesions before the region of the duct can be exposed.

The guide to the common duct is its tributary, the cystic duct, which is itself found by following down the neck of the gall-bladder. In this connection two points are of especial interest and importance. Occasionally the cystic duct runs for a considerable distance in the right free border of the gastro-hepatic omentum before joining with the hepatic to form the common duct. In this case, if the condition is not recognized, the cystic duct may be incised in the belief that it is the common duct, occasioning considerable confusion.

Secondly, under pathological conditions the common duct is frequently much enlarged and its relation to the portal vein so altered that the vein may present in the free border of the omentum rather than the duct. As opening of the vein by mistake is so serious a matter I have adopted the practice of always aspirating with a small

hypodermic syringe the structure which I believe to be the duct, before opening it.

The ideal operation for obstruction is that which removes the cause of the obstruction and provides for the restoration of the common duct. This is usually possible in the case of stone or stricture and might conceivably be done in the case of small localized tumor of the duct. The operations to be employed are choledochostomy for the removal of stone; resection of the duct for tumor or impermeable stricture; or a plastic operation may be done in the case of stricture with the object of enlarging the lumen. When the stricture is inaccessible by other means, forcible dilatation may effect a symptomatic cure. In all these operations drainage is an essential part. The T-tube of Kehr is the best device for the drainage of the common duct. This is so inserted that one end of the cross arm points upwards, the other down the duct, while the long arm is carried out of the incision to carry off the excess bile. When any reconstruction of this duct is necessary the T-tube is well nigh indispensable.

When the ideal cure of obstruction is not possible the other methods at our disposal are, first, short circuiting operations, by which the bile is conveyed to the intestine without passing through the common duct; secondly, drainage operations by which the inflammation causing the obstruction is allayed and resumption of the function of the duct thus allowed.

It is chiefly pancreatic obstruction that calls for short-circuiting operations owing to the totally impractical character of any attempt to remove the pancreas. The simplest and most promising method of short-circuiting the bile stream is by anastomosing the gall-bladder to some portion of the intestine, as the duodenum, cholecysto-duodenostomy, or the transverse colon, cholecysto-colostomy, etc. Exceptionally it may be attempted to make an anastomosis between the bile ducts and the intestine, but such surgery is as a rule fanciful and unrewarding from the standpoint of results. Cholecysto-duodenostomy is useful in obstructive pancreatitis and in the early stages of cancer of the pancreas. In the later stages of cancer the mortality is prohibitive.

Drainage operations, cholecystostomy, choledochostomy, are not only palliative, but in many instances truly curative. A large part of the

success attending operations upon the biliary tract is to be attributed to the drainage of the tract.

In gall-stones, cholecystitis, cholangitis and pericholecystitis it is the drainage that relieves the infection underlying the cause of obstruction. Simple drainage should not be done in cases such as stricture of the duct, or carcinoma of the pancreas since permanent fistula will result. In the presence of a patulous common duct, however, biliary fistulas readily close. In fact they close too readily in some cases of extensive chronic inflammation unless we take steps to delay closure. In the presence of marked inflammatory disease and particularly when the pancreas is involved, prolonged drainage is desirable. This may be accomplished by marsupializing the gall-bladder by stitching its opening to the peritoneum of the abdominal wound. When prolonged drainage is not desired a dressed tube may be fastened into the gall-bladder which is then dropped back and allowed to assume its natural position with the idea of preventing adhesions from fixing in such a situation that traction upon the gall-bladder will later cause pain.

I have tried to touch upon only a few of the more important considerations in connection with a subject too big to be exhausted.

1634 Walnut Street.

CANCER DIAGNOSIS.

A serum test to aid in the diagnosis of cancer is described by OTTO LOWY, Newark, N. J. (*Journal A. M. A.*, February 7), based on the principle of Abderhalden's test for pregnancy and depending on the presence of a specific ferment which has the power of digesting its corresponding albumin. The cancer albumin is obtained by cutting up pieces of carcinoma of the breast and after boiling for half an hour are kept in chloroform water on ice. He uses Schleich and Schnell diffusion thimbles, No. 579, which have been tested as to their impermeability to peptone and colloids. A small piece of prepared cancer albumin is added to the dialyzing thimble with 2 c. c. of suspected serum. The thimble is then put into a glass cylinder containing about 10 c. c. of sterile distilled water. Thimble 2 contains serum alone and Thimble 3 contains cancer albumin and distilled water. Both these thimbles

are put into cylinders with distilled water, the same as No. 1. All of the serums, as well as the water surrounding them, are then covered with a layer of toluol and incubated for sixteen hours, at the end of which time 5 c. c. of distilled water of each cylinder is tested with ninhydrin for the presence of peptone, by boiling in a water-bath for ten minutes. If the serum be free from a cancer case Cylinder 1 will assume a deep violet color, while the others should remain colorless; otherwise the reaction must be discarded. If the reaction is negative, all three should be colorless. If positive, Tube 1 is retested against fresh serum, and if negative, a retest is made against peptone, the idea being to guard against defective thimbles. The blood used must be chemically as well as bacteriologically clean, must not be shaken, and not over 24 hours old. He has tried the test in sixty-one cases, nineteen of carcinoma, and the others of various conditions. All the cancer cases gave a positive reaction, and all the others negative, with the exception of a benign tumor of the breast, one case of fibroid and another of diabetes. Questions still to be settled are: The constancy of the test in all cases of cancer. What other conditions will thus react? How early will the reaction be positive? And how soon will it disappear after operation? Will its appearance after operation mean recurrence, and what will be the bearing on prognosis of its persistence? He believes that he has found a proteolytic ferment in the blood of cancer patients. Whether it is constant or not is yet to be determined. Lowy thinks the use of the test is justified in obscure stomach cases, and if found specific, periodic tests may be of value near the menopause.

THE SMALL HOSPITAL.

H. C. Cole, Bogalusa, La., (*Journal A. M. A.*, February 7), describes the organization and management of a small hospital for fifty patients built and supported by two large corporations. The construction cost \$41,000, including the equipment, and the annual expense, including physicians', superintendents' and nurses' salaries, is \$30,501. It supports a training-school for nurses with a two-year course. The hospital fund is made up by deduction from the wages of the nine or ten thousand employees of the two corporations, who receive full medical attention of all kinds without charge except a nominal fee for obstetric and venereal cases.

Vermont Medical Monthly.

A Journal of Review, Reform and Progress in the Medical Sciences.

H. C. TINKHAM, M. D., }
B. H. STONE, M. D., }*Editors.*

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EDITORIAL.

Health is a nation's greatest asset. Most people would accept this statement as axiomatic but lest there be some who fail to give health so exalted a position, let us demonstrate.

Suppose we say that wealth or material possessions are its greatest asset. Can a nation of sick people enjoy money? It is absurd. Suppose we say that a nation's toilers, those who actually produce wealth, are its greatest asset. Can a sick man work? It is true that many are obliged to do so. And great is the shame of it. At all events, a sick nation is not an efficient nation from a material standpoint.

Suppose we say that education is a nation's greatest asset. Is not an educated man, who is handicapped by disease, an object of compassion rather than of admiration and envy? To be sure we admire many a brave and refined spirit who, in spite of bodily ailments, still contributes to the world's common storehouse. But a nation could hardly continue if we were all invalids.

Suppose we say that agriculture is a nation's greatest asset. Of course we cannot live without

the fruits of the earth. But could a nation be fed if all its farmers were held in the fetters of bodily disease? There is no need of multiplying illustrations for all must come to the same conclusion. We must admit that from an economic, if not from a humanitarian, standpoint health is a nation's greatest asset. All other hypotheses reduce to the absurd. If this is true of the nation is it not equally true of the commonwealth and the community? What is true of the whole must be true of all the parts.

What, then, is the application? Let us consider. The State of Vermont has a medical college, only one. From this college, the great majority of the doctors who are guarding the health of the people, received their training. To this college the state owes the high standing of its medical profession. To this college come the sick, rich and poor alike from all over the state to receive the benefits which its faculty of doctors can give. Only those who stand at the doors of our hospitals can even guess how great is the number who avail themselves of these benefits.

What is the danger? Just this. There is in New York City an organization, with a layman at its head, whose ambition it is to greatly reduce the number of medical colleges in the United States, in fact the number was reduced from 160 in the year 1904 to 106 in the year 1913. The reasons given for doing this were that many of these schools were mere diploma mills and gave little or no instruction in medicine. This was a fact and a good and sufficient reason for their discontinuance, but the soundness and validity of the next reason is not quite as apparent, viz.: that too many doctors were being graduated. What has been the effect of this raising of standards and reduction of the number of schools? First, it has undoubtedly raised the quality of medical education and the men who are now being graduated are better qualified for the practice of medicine than those graduating twenty years ago.

This has worked for the benefit of the public. There is, however, another aspect of the situation which should not be overlooked. The number of students attending medical schools has been reduced from 28,142 in the year 1904, to 17,015 in the year 1913, a decrease of 39.5%. The number of men graduating in medicine has been reduced from 5,747 in the year 1914, to 3,981 in the year 1913, a reduction of 30.7%. In the meantime just as many doctors have been dying and the population of the United States increased from 76,000,000 in 1900, to more than 90,000,000 in 1910. While these two periods of time do not exactly correspond they do show the rapid decrease in the number of doctors being graduated and the marked increase in the population. Should this thing continue and the number of medical colleges be reduced to 60, which is the goal that has been set by the Carnegie Foundation, what must the result be? The law of supply and demand is too well understood to need any deductions so far as the country as a whole is concerned but a few pointers with regard to the state of Vermont will help to comprehend what a crisis the state is facing at the present moment.

The Carnegie Foundation, in its recent report, recommends that the medical college be discontinued, giving as the chief reason, that because it is not located in a town of at least 100,000 or 200,000 population, the students do not have sufficient patients from whom to study diseases at first hand. Indeed they say there should be but two medical colleges in New England, Harvard and Yale. Certain it is that Burlington is not as large as Boston but it is also just as certain that the graduates of the University of Vermont College of Medicine make just as good a showing before the State Boards of Medical Registration as do the graduates from Harvard. It must be that the men at Vermont get some training, else they could not do this.

Let us take a look at the size of towns where some other medical colleges are located and at the rating given to them by the Council on Medical Education of the American Medical Association, which is considered the highest authority of medical education in the country. Medical colleges are rated as "A plus" when they are thought to be very nearly satisfactory in all respects; "A" when there are a number of conditions which ought to be improved; "B" when there is needed a general improvement; "C" when there is needed a complete reorganization.

The following colleges although located in small towns have the highest possible rating viz.: "A plus":

State University of Iowa, College of Medicine, Iowa City, 10,091 population; University of Michigan, Department of Medicine and Surgery, Ann Arbor, 14,817 population; University of Texas, Department of Medicine, Galveston, 36,981 population; University of Virginia, Department of Medicine, Charlottesville, 6,765 population. And yet, the University of Vermont College of Medicine located in Burlington, which has, with the community immediately surrounding it, a population of about 30,000 is rated in class "A," and if the head of the Carnegie Foundation had his way we should be in class "B" or, better still, discontinued altogether.

What would be the effect upon the state if the medical college were to close its doors? If the total number of medical graduates in the United States has been reduced over 30%, and is to be still farther reduced how will Vermont fare when her college of medicine no longer supplies the smaller towns with doctors? What incentive will there then be for the maintenance of the present high standards in the medical profession? But if medical colleges of a satisfactory grade can be maintained in other towns even smaller than Burlington, is there any reason why the same thing

cannot be done here? There is absolutely none. All that is necessary is the support of the people of Vermont and we believe that they are ready to give it in full measure. The need is urgent. The cause is worthy. We believe that the people appreciate the situation.

T. S. BROWP.

The New York Municipal Board of Estimates has recently made a report which recommends the State Law of New York concerning autopsies be changed so as to enable hospitals to perform a much larger percentage of autopsies than is allowed at present. The present law requires that except in cases in the hand of a coroner, the consent of the nearest of kin must be obtained. The proposed law will allow hospitals to perform autopsies in cases where there is no objection within forty-eight hours from husband, wife or next of kin, thus taking from the authorities, the burden of finding and consulting with the next of kin. The report which deals especially with Bellevue Hospital and Morgue states—"Bellevue Hospital has built and equipped the finest pathological building in the United States and probably the best in existence. It is provided with every modern facility for performing autopsies and following up such autopsies by experimental work upon tissues, but although the hospital has provided itself with this exceptionally well designed and thoroughly equipped building, it is practically unable to use it, because of its inability to secure permission to perform autopsies." "So long as it is impossible to perform a larger percentage of autopsies, medical knowledge in the United States will lag behind that of Europe, and advancement will necessarily be slow. In this country very satisfactory progress is being made in surgical knowledge and methods and in the study of bacteriological diseases, but advance in knowledge of chronic diseases and diseases relating to a disturbed metabolism is slow. Progress along these

lines will be greatly retarded by lack of opportunity to study effects upon organs and tissues of various treatments which may be administered.

"It is exceedingly difficult to secure consents for autopsies from relatives and friends, and there is little hope of securing a much larger percentage of consents than at present except through the gradual education of the public to the value of and necessity for, autopsies. It seems obvious therefore, that efforts should be made to secure the privilege of autopsying as large a proportion as possible of the unclaimed dead."

The report goes on to call attention to the result of the investigation of Dr. Horst Oertel, formerly chief pathologist of the Russell Sage Foundation, which showed that 47.7 per cent. of the autopsies during the period of investigation did not confirm the clinical diagnosis. In other words 47% of the clinical diagnoses was in error, these figures are remarkably similar to those of Cabot and Bacon widely published. That this is so, is not due to any inherent weakness in American diagnosticians but merely to the fact that only in the rarest instances does the American internist have an opportunity to learn from his errors. The man who can have a mistaken diagnosis clearly shown to him, is not likely to fall into the same error again but without this demonstration of his failure, he may go serenely on making the same mistake over and over again, often at the expense of human life. If this matter could be clearly brought home to people, the foolish prejudice against the postmortem which has done so much to hamper medical progress in America would vanish, but there is little hope of awakening the laity on the subject when a large proportion of the practicing physicians will rarely take the trouble to *suggest* an autopsy even in puzzling cases, to the relatives of their deceased patients. On their apathetic shoulders must rest most of the disgrace of the condition as it exists to-day.

The report of this Lay Board referred to above shows how amenable people are to these suggestions when any medical man or group of medical men call attention to the benefit to the living which may be gained by more liberty in examining the bodies of the dead. The writer knows one physician of many years of practice who has never failed to obtain free consent for a post-mortem examination upon every case dying under his care. And that man has never lost or even endangered the respect and good will of his patients or their friends. On the other he has acquired a deserved reputation for thoroughness in his work and a personal interest in every case which does not cease where he can do more for the treatment. Certainly no one can accuse him of being afraid to face his errors.

We shall watch with great interest for the introduction of this bill into New York legislature. The medical societies of the State of New York should and undoubtedly will urge its passage. It is fitting that our Empire State should take the lead in this long step in the progress of clinical medicine.

Editor Vt. Medical Monthly:—

Several physicians in Vermont and others have been persuaded by a crook organization in New Bedford, Mass. known as the Whitney Law Corporation to place their accounts in their hands for collection. One is required to sign a contract, which to all intents and purposes seems reasonable, but when closely examined, often too late, is found clothed in ambiguous legal parlance quite at variance with the understanding and agreement with their solicitor and which gives them unlimited power. The results are invariably no returns and no redress. I believe it my duty to warn every physician to beware of them. Let them alone.

W. SCOTT-NAY, M. D.

Underhill, Vt., April, 1914.

NEWS ITEMS.

Dr. E. J. Melville of St. Albans, Vt., announces a personally conducted trip for physicians through Scotland and England, arriving in London in time to attend the clinical congress of American surgeons which will convene in that city July 25th. The party will leave Montreal on steamer Scandinavia, July 11th.

Dr. Henry N. Montiflore, who has been in Quechee, Vt., for the past ten years, has gone to his old home town, St. Albans, to practice.

Dr. Arthur H. Longstreet of 67 Hanson Place, Brooklyn, N. Y., U. V. M., who has been laid up with a severe attack of typhoid fever, announces that he has fully recovered and is continuing his practice.

Dr. Charles F. Mills of South Framingham, Mass., announces a personally conducted trip through France, Switzerland and Italy, during the summer of 1914. Special attention will be given to those desiring to learn the language. The party starts from New York by S. S. Pennsylvania, June 25th.

Dr. S. L. Goodrich, formerly of Burlington, who has been connected with the State Hospital at Waterbury, has given up hospital work and taken the office of the late Dr. W. F. Minard of Waterbury. Doctor Goodrich was married last December to Miss Fontinell Nichols. Miss Nichols was a graduate nurse of the Mary Fletcher hospital.

After a service of nearly twenty years in the New York City Department of Health, Dr. Ernest J. Lederle, commissioner of health and president of the board of health, tendered his resignation, effective February 1st. He was succeeded by Dr. S. S. Goldwater. Resolutions of appreciation of his work were passed by the board.

VIRGINIA BOARD OF HEALTH PLANS TO SUPPLY DOCTORS.

The State Board of Health announces the opening of a register in its offices for the listing of physicians who wish to move and for the convenience of localities which stand in need of doctors. Free access will be given this register by all inquirers and efforts will be made to prepare a complete list of those sections of Virginia where the needs of the public demand more physicians.

For this reason, physicians who wish to change their residence, or who wish assistants or substitutes, etc., should promptly send their names and a statement of their wishes to the offices of the board in this city.

In recognition of his twenty-six years of splendid service as general medical officer in the Department of Health of New York City, Dr. Hermann M. Biggs was tendered a testimonial dinner by two hundred friends and colleagues, themselves representative men, on February 7th, the occasion of his retirement from active service.

A NEW ABORTION BILL.

A bill has been introduced in the St. Louis Municipal Assembly. Any woman who shall, with intent to produce or promote her miscarriage or abortion, solicit any physician to administer to her any drug or substance whatsoever, or to use or employ any instrument or other means whatsoever, with intent thereby to procure her abortion or miscarriage, unless the same shall have been necessary to preserve her life, or shall have been advised by a physician to be necessary for that purpose, shall be guilty of a misdemeanor, and upon conviction shall be fined not less than twenty-five dollars nor more than two hundred and fifty dollars for each offense.

One of the most difficult problems in the control of abortion is that the principle of privileged communications shields the woman. She is nominally subject to severe punishment, so severe, indeed, that there is a natural hesitation toward enforcing it. Thus it usually happens that evidence of the crime is available only after she is dead. We believe that this legislation will accomplish practical results—not that it will entirely prevent abortion.

New York Skin and Cancer Hospital announces a course of clinical lectures and demonstrations in the out-patient hall of the hospital on the following afternoons, at 4.15 o'clock. Syphilis—By Dr. Bulkley. April 1. Primary lesions, genital and extra-genital—Innocent syphilis. April 8. Early manifestations of syphilis. April 15. Late manifestations of syphilis. April 22. Marital and hereditary syphilis. April 29. Treatment of syphilis.

Cancer.—By Dr. William Seaman Bainbridge. April 30. Some practical phases of the cancer problem.

The lectures will be illustrated by cases, models, colored plates, photographs, etc.

The course will be free to the Medical Profession, on the presentation of their professional cards.

F. HAAS,

Chairman of Executive Committee.

March 1, 1914.

The INDEX OFFICE which has recently been established in Chicago intends to make a specialty of serving the medical profession by undertaking to supply exhaustive or selected bibliographies of medical subjects, translations or abstracts of articles or monographs, copies, photographic or otherwise, of manuscript, printed or illustrative material.

Special attention will be paid to discretionary research and investigations in the libraries of Chicago and other cities.

The Office also intends to bring investigators in touch with the work of others in the same line of research.

Located in the city of great libraries, the Office will be in position to undertake quite extensive investigations without going outside the locality of its headquarters. It is the intention of the Board of Trustees, however, to establish connections in the other great library centers of the world.

Dr. Bayard Holmes, surgeon and medical writer, is President of the Office, Askel G. S. Josephson, Cataloguer of the John Crerar Library, is Secretary and directing officer. The Office is located at 31 West Lake Street, Chicago.

Dr. L. E. McKinley, U. V. M. 1909, whose home is in Barnet, has entered into general practice at Newbury, Vt. For the past year he has been house physician at the Brattleboro Retreat.

Dr. Johnson at Concord, Vt., is laid up with a broken thigh.

Dr. B. D. Thorpe whose home is in Lisbon, N. H., has located in Newport, Vt. Columbia, 1911.

OBITUARY.

Dr. T. R. Waugh of St. Albans died March 18th at the Rood Sanitarium in Burlington, of heart disease. Dr. Waugh was sixty-six years of age at the time of his death. He was graduated from Hahnemann College in Philadelphia, 1872, coming to St. Albans immediately, where he afterwards continued in active practice up to within a few months previous to his decease.

Dr. Samuel H. Sparhawk aged 72 years, died at St. Johnsbury, March 3rd, suddenly of apoplexy. He graduated from a homeopathic school in Philadelphia. He saw active service in the Civil War and was at the battle of Gettysburg. He has lived in St. Johnsbury since 1880.

Dr. Egbert LeFevre, dean of N. Y. University Medical College, died March 30th of scarlet fever at the age of 55. Dr. LeFevre was one of the best known and most beloved and respected physicians in New York City. Dr. LeFevre's book on Physical Diagnosis, published in 1902, is still a standard.

Alvin Henri Wright, M. D., University of Vermont, Burlington, 1890; of San Francisco, died in the City and County Hospital in that City, March 13, aged 46 years.

Lee, H. H., of Wells River, died early in April at his home of Cancer of the Pancreas. Dr. Lee has been in poor health for about 2 years.

Rev. Ohan Gaidzakian, M. D., (University of Vermont, 1883) died at the age of 77 at the sanitarium of Dr. Geo. H. Godson at Harmon-on-the-Hudson, N. Y.

AN EPITOME OF

CURRENT MEDICAL LITERATURE.

MEDICINE A FUNCTION OF THE STATE.

ARTHUR DEAN BEVAN, Chicago (*Journal A. M. A.*, March 14), presents the progress which has been made during nine years toward raising medical education to the standard formulated by the Council on Medical Education in 1905, and shows the improvements which have resulted in all medical schools. As medicine has become an important function of the state he favors state rather than private support of

medical schools in the interest of the people as a whole and shows the large extent to which in foreign countries and the United States the medical schools are under the aid and control of the state. He pleads for a national board of health and gives the benefits which would result from the creation of enlightened public opinion on matters of public health through the efforts of such a board.

DANGERS OF EXCESSIVE FORMALISM IN THE PRELIMINARY REQUIREMENTS FOR MEDICAL EDUCATION.

In an address read before the recent Council on Medical Education in Chicago, President LOWELL, of Harvard University (*Journal A. M. A.*, March 14), calls attention to certain possible dangers in the rigid inelastic preliminary requirements in medical education. The points he criticizes are embodied in the rules adopted March, 1913. These requirements are: one course each in physics, chemistry and biology with a prescribed number of lectures and appropriate laboratory work; also a couple of courses in German or French aggregating three or four hours a week for the year. He gives his own case as an illustration of the possibilities under these rules. When a child, he studied in France and he could read the language easily. He later took a course in German but did not learn to read it easily until later life. He says, therefore, that he might have qualified in German but not in French. A student in Harvard who does not pass an entrance examination in French and German is obliged to take an examination in the language he does not pass; a course equal to the above minimum required, and yet they find the student commonly unable to use foreign books. The prescribed rules criticized would by no means insure such ability while they may exclude a man who can. Though less strikingly evident the same thing is true of the scientific requirements. A college education, if it has any value in training the mind, must make men more capable in tackling difficult subjects and hence a better knowledge can be obtained of such in the senior year than in the freshman year, though the latter is the thing required in admission to the medical schools. The test by courses is inaccurate in that it lets in a certain number of unqualified men but this is not the most serious matter. It is likely to exclude a number of excellent recruits who have not selected their courses in college with a view to a medical career. It is not altogether true that a man can settle on his career early in life. This is the case at least with college students. Any one can recall cases of eminent practitioners who did not decide to enter medical school until too late to comply with these rules. Lowell gives some facts from the statistics of the graduates of the Harvard medical college which go far, he thinks, to show that a large amount of scientific preparation is not an essential and that a small amount is not always a hindrance to successful work. The medical school should select men from their standing in their college course so far as possible or according to their ability as shown otherwise. He does not plead for men with inadequate preparation but argues for that preparation which will be a real test of the man's knowledge, not merely of some special courses he has gone through—a test which will not, for a failure to decide early on his career keep out the men of power.

PRELIMINARY COLLEGE YEAR.

R. H. WHITEHEAD, Charlottesville, Va. (*Journal A. M. A.*, March 14), discusses the preliminary training of a medical student and says we have a right to expect it to do two things: (1) equip our students with a certain amount of training in and sympathy with scientific work and thought; (2) supply them with a certain amount of basic knowledge needed for medical study. The first of these he considers of paramount importance; he is not so much concerned with the content of these courses as with the training they give. The chemistry acquirement is the simplest and he thinks we can safely trust the college for this. The biology courses afforded are not uniform and he would have a return to the older course in biology, giving a working knowledge of the types of living beings and a conception of the great generalizations. Physics is a stumbling-block if only one year of college work is required and the trouble is not so much in the laboratory work as in the abstract thought required. The lectures should be followed up by searching oral recitations to test the students' understanding of the subject and to correct misconceptions. The modern language course, Whitehead thinks, should be restricted to German or French and preferably the former. It may be doubted, however, if the college one-year course conveys an adequate reading knowledge and it might be improved for the purpose if largely made a reading course with special stress on sight reading and the last semester devoted to scientific articles. We shall have to depend on the college but he doubts the wisdom of the council's action allowing medical schools lacking bona-fide connection with universities or endowment to attempt this work. He gives some special points met with in the southern schools and concludes that there are a large number of non-professional schools that can be trusted to do this work. His ideas also are given as to who shall accept the certificates received from the colleges and thinks that this can be best trusted to the deans of the medical school.

MEDICAL COLLEGES AND HOSPITALS.

Without detracting from the value of privately endowed or sectarian hospitals C. R. HOLMES, Cincinnati (*Journal A. M. A.*, March 14), thinks that they are not the best adapted for medical instruction. Being private institutions, they can elect what kind of diseases they will admit and infectious and contagious diseases are excluded. Many of them specialize, thus restricting their utility, and the private and paid patients are not those who are always willing to be used by the medical staff for teaching purposes. To see all classes of cases and have them at our command we shall have to depend on the public or municipal institutions, which, to do their best service for the community should aid in every possible way to broaden our knowledge and thus be teaching hospitals. Holmes gives the provisions in the proposed new charter for Cincinnati which place the medical department of the city hospital under the jurisdiction of the university and hopes that it will receive public approval. It depends on the leaders of the profession, he says, whether politics shall prevent the carrying out of the high ideals. He advocates the abolition of the rotating service of the chiefs of the departments and would have the heads of such

paid a salary for devoting a specific time to the work while allowed to also carry on private practice. He is heartily in favor of the hospital year and thinks that, with the number of hospitals existing, there seems no valid reason why there should be any difficulty in providing the graduates with a hospital internship, if these are properly organized and controlled.

CANADIAN MEDICAL REGISTRATION.

R. W. POWELL, Registrar of the Medical Council of Canada, Ottawa (*Journal A. M. A.*, March 14), gives an account of the origin of the present medical registration act of the Dominion. With the birth of the Dominion all matters of medical administration were placed under control of the separate provinces, though it was clear that this was not the intention of the framers of the act. Notwithstanding this, the provinces have held out stoutly with sometimes conflicting regulations in each, and it was claimed that it could only be changed by amendment made by the imperial parliament in London. With the founding of the Canada Medical Association, the matter came to the front and Powell gives great credit to Dr. T. G. Roddick for bringing about the change. The first act was the constitution of a body known as the Medical Council of Canada with power to create an examining board and to establish a register. The next point considered was the standard to be fixed by the council which had to be fixed as high as that of any one of the provinces separately. The next was a composition of a council, which gave rise to much discussion and argument but the following arrangement was reached. Each province with its own medical council was allowed two representatives, each university having a teaching faculty of medicine or medical school with university affiliations for granting medical degrees, is entitled to one representative. The homeopathic body considered as a whole is allowed to send three representatives and the Governor General in the Council has the right to send three. On this point it is provided further that, so long as certain of the western provinces do not have university representation, they shall have two of the three government appointees selected from them. Another point is that the Medical Council of Canada is to have nothing to do with matriculation or preliminary education. Another, following naturally from this, is that holders of foreign diplomas must present certificates similar to those of the Canadian graduates. As regards those already licensed in the provinces, it was provided that they could have a Dominion registration by paying the fee and complying with certain ordinary regulations when ten years have expired from the date of the provincial license. The so-called ten-year clause goes on for a time and applies to all licensed to practice prior to Nov. 7, 1912. Finally it was settled that the act was not to become operative but to be more in the shape of a permissive bill until the provincial legislatures had legislated in effect, "that they agreed to its provisions and had so amended the medical act of the province that it provided that if A. B. presented himself prior to the registrar of the province holding a certificate that he is enrolled on the medical register of Canada, he is entitled to be registered on the register of the province as a licensed practitioner by complying with the ordinary regulations in that behalf, such as paying the customary required fee, etc."

A LETTER TO MEDICAL MEN.

Dear Sir:

Of all the discouraging cases which confront the general practitioner there are few more hopeless than chronic nasal and aural troubles. The difficulty of treating discharges from the ears is increased by uncertainty as to their etiology, the only fact that can safely be postulated regarding them being that they are the result of a mixed infection. For example, a bacteriological report recently obtained with reference to an ear discharge is as follows:

Mixed Infections.

"Films prepared direct from this swabbing contain many gram-negative and gram-positive bacilli, together with several gram-positive micrococci. The inoculated media yield cultures showing large numbers of bacillus proteus, small numbers of diphtheroid bacilli, and a few micrococci."

A considerable volume of evidence has been accumulated showing that Phylacogen, without operation or local treatment, not only frees the sufferer from excessive secretion, but also, even when the secretion is merely reduced in quantity, entirely gets rid of its unpleasant odor.

We have the records of a large number of cases treated with Mixed Infection Phylacogen.

Two cases are supplied by a surgeon. In both, the discharge became abundant and offensive after operation. Treatment was commenced

Suppurating Antrum.

with 1 Cc. Mixed Infection Phylacogen, the injection being gradually increased until a dose of 8 Cc. was reached. The reactions in both cases were of a comparatively mild character, and the result has been entirely satisfactory.

Another case is that of a professional man (43) who has suffered from a chronic nasal catarrh for some nine years, and deafness in the left ear for about a year, with difficulty in breathing through the left nostril. This gentleman does much public speaking, and in the frequent effort to clear his throat he often became quite hoarse. He received in all eight injections of Mixed Infection Phylacogen, doses

Catarrh with Deafness.

up to 10 Cc. being given. The reactions after the third, fourth and fifth doses were very severe, but the later doses did not cause much disturbance. He gradually lost his catarrh, and hearing returned at the middle of the course. The result has been most satisfactory, especially as regards the improved condition of his voice and throat in public speaking.

Another case is that of a housemaid (26), who when five years old had an attack of scarlet fever. Ever since then she has had discharge from the right ear, with almost complete deafness; could only hear a watch pressed close on the ear. Treatment was commenced on April 27, 1913, with injection of 2 Cc. Mixed Infection Phylacogen, doses being gradually increased to 10 Cc. After two or three injections the discharge increased in quantity, and became thinner, and thereafter gradually diminished. After eleven injections, extending over three weeks, the patient with her left ear on the pillow heard with the right ear for the first time in twenty-one years the clock ticking in her bedroom. Since then hearing in the right ear is almost as good as in the left.

Suppurative Otitis Media.

One of the medical men from whose reports we have quoted concludes with the following remark: "In my opinion the most remarkable thing about these cases—even more remarkable than the cure of the catarrhs—is the great improvement in the general health which followed in the three to four months after the injections had been discontinued." This opinion is shared by every medical man with whom we have come in contact who has given Phylacogen a fair trial in suitable cases. Our recently issued pamphlets on "Phylacogen Therapy," 1914 edition, contain much interesting material on the new system of treatment, and we shall be glad to send them to you on request.

General Health Improved.

Very truly yours,
Detroit, Mich. PARKE, DAVIS & CO.

THERAPEUTIC NOTES.

THE GREAT PRACTICAL ADVANCE IN SEROTHERAPY AND IMMUNIZATION BY MEANS OF SEROBACTERINS.—Serobacterins are sensitized bacterial vaccines or suspensions of killed sensitized bacteria. In the language of the laboratory, they are produced by saturating bacteria with the specific antibodies found in the serum of an immunized animal, removing the excess of serum by centrifuging and suspending the bacteria in a saline solution. According to the trustworthy reports of bacteriologists and clinicians, they are destined in great measure to supplant other means of immunizing against and treatment of many infectious diseases.

The method of sensitizing is, in brief, the treatment of the killed bacteria with specific immune serum whereby the bacteria unite with the immune bodies present in the serum, so that upon injection the combination is ready for immediate attack by the "complement" in the patient's blood.

There is thus secured a great gain of time over the older methods of bacterial therapy, and whether in prevention or treatment this immediacy is of the utmost value. In a few days, for instance, by typhoserobacterin, the practitioner may now secure for his patient immunity against typhoid as formerly in nearly a month with the old typhoid vaccine.

Other advantages are that there is no local irritation at site of injection and little or no lassitude or sickness. More important, still, is the fact that there is no negative phase. The size of the doses may also be greatly increased, even quadrupled, thus assuring rapidity of production and strength of immunity.

Of interest in this connection are the laboratory results of Theobald Smith and the work of Von Behring in combining diphtheria toxin and antitoxin for immunization against diphtheria. By making mixtures containing varying amounts of toxin and antitoxin they were able to secure any degree of immunity—from a short passive immunity due to the serum, to an active immunity of long duration resulting from the action of the toxin.

To the foregoing advantages of the uses of serobacterins it may be added that in very late stages of the disease, when the bacterial vaccines and even serum treatment is ineffective, successful results are sometimes obtained and life is saved.

Besredka, of the Pasteur Institute, authoritatively summarizes the matter by saying:—

"Whatever the nature of the virus, whether the microbe of plague, dysentery, cholera or typhoid fever, or whether the virus of rabies or the toxin of diphtheria, whether the microbes are killed or living, sensitization confers upon them properties which convert them into vaccines of the first order, possessing an action which is sure, rapid, inoffensive and durable."

The results of the clinical use of serobacterins in actual practice give, of course, the final and convincing test. Of such reports one notices that of Gordon, on the successful use of strepto-serobacterins (sensitized streptococcus vaccine) in erysipelas, emphasizing the fact that when the treatment did no good it did not do the slightest harm; that prophylactically in the face of epidemics it should have a great future; that in hospitals the resistance of the patients may be raised to bacillus coli, streptococcus pyogenes, or the pneumococcus before operations on the alimentary tract or other infected area; for preventing secondary infections and possibly in cases of

difficult labor. He says that in cases already infected, the evidence shows that in a proportion of instances it is possible by this method to promote materially the patient's recovery. "By administering a sensitized vaccine to these patients, we appear to bring into action available reserves in that complex and still incompletely defined entity, the patient's specific resistance."

As to the dosage, Gordon, in erysipelas, gave as the first dose 500 million; 24 hours later the second dose was 1,000 million; the third, in 24 hours, was 2,000 million.

Broughton-Alcock found that in acute and chronic gonorrhoeal urethritis the injections were of little value, but that good results were almost invariable in gonorrhoeal orchitis, epididymitis, arthritis and peri-arthritis, tenosynovitis, acne, furunculosis, impetigo, seborrhoeic eczema.

Boinet found that the good results in typhoid fever were in accordance with its use nearer the beginning of the infection, diminishing the gravity and shortening the duration of the disease.

In gonorrhoea Cruveilhier found that in all cases the duration of the disease was sensibly modified; in acute gonorrhoeal rheumatism he reports a number of cures. In chronic gonorrhoeal rheumatism, and metritis favorable results are reported.

Speaking generally, serobacterins give active immunity within 24 hours after the first injection, with marked improvement in the patient's condition. They produce no opsonic or clinical negative phase—and, therefore, will do away with this cause of solicitude on the part of physicians using the ordinary bacterial vaccines in the past.

To insure that the serobacterin is properly sensitized careful complement fixation tests are carried out to ascertain the extent of antibody absorption by the bacteria. As a further safeguard guinea-pigs are injected and the action of the serobacterin is followed by means of a series of tests made with the blood serum of the treated animal.

Great care is advisable in the selection of a sensitized vaccine, or serobacterin—the product only of that manufacturer should be chosen of the highest professional character.

A complete review of the Literature on Serobacterins appears in the *Mulford Digest* for December, and we suggest that those who have not received a copy of this issue request one, to be read and kept on file for future reference.

BACTERIAL VACCINE THERAPY.—Treatment of infectious diseases with preparations derived from corresponding micro-organisms is unquestionably growing in favor. Not only do the bacterial vaccines (or bacterins) seem destined to a permanent place in therapeutics, but their field of applicability is constantly broadening. Proof of this is seen in the growing list of these products announced by Parke, Davis & Co., no less than nineteen of the vaccines now being offered to the profession.

There are a number of reasons for the favor which is being accorded to the bacterial vaccines. In the first place these products are in consonance with the scientific trend of present-day medication. They are being used with a gratifying measure of success. The way in which they are marketed (sterile solutions in hermetically sealed bulbs and in graduated syringes, ready for injection) appeals to the modern medical man, since it assures both safety and con-

venience. The moderate prices at which they may be purchased also tend to give them vogue.

THE UNREST OF ACUTE INFECTION.—It frequently happens that one of the most annoying symptoms of an acute infection is a state of marked restlessness. An agent of particular utility in this condition is Bromida (Battle) which, although administered in small dosage, may be relied upon to quiet the wrought up nervous centers and secure for the harassed patient the rest he so obviously needs.

THE RELIEF OF HEADACHES.—One of the reasons that make Pasadyne (Daniel) particularly suitable for use in headaches and neuralgias, is its freedom from danger. Not only this, but, furthermore, its employment does not subject the patient to the jeopardy of drug addiction. Pasadyne (Daniel) is merely a distinctive name for the more potent concentrated tincture of passiflora incarnata at the professions's command. Use it in headache and neuralgia and note its effect. A sample bottle may be had by addressing the Laboratory of John B. Daniel, Atlanta, Ga.

THE THERAPY OF CHRONIC COUGHS.—The logical therapy of chronic coughs does not lie in the use of soothing expectorants whose main purpose is the blunting of the mucosa's sensibility and which do not really help the bronchial tree free itself of the cough's cause—such treatment is palliative.

The logical treatment of chronic coughs embraces the continued use of a tissue food which will enable the system to throw off a cough—Cord. Ext. Ol. Morrhuac Comp. (Hagee) for instance. Cod liver oil in the form of this cordial quickly demonstrates its marked value in this condition.

NASAL AND AURAL INFECTIONS.

There is a growing impression among specialists in these diseases that catarrhs of the nose and ear, especially chronic discharges, are commonly the results of mixed infections. If this view is correct, is it not a fair inference that Mixed Infection Phylacogen may provide a solution to one of the most perplexing problems that the profession has been called upon to solve? There is ground for such conclusion. Certain it is that the Phylacogen referred to has produced some very satisfactory results in numerous cases which had failed to respond to conventional modes of treatment. The writer recalls several cases of this character that have been reported in the medical press during the last year and a half.

An open letter to the profession which is appearing in leading medical journals over the signature of Parke, Davis & Co. adduces additional evidence of the value of Mixed Infection Phylacogen in stubborn nasal and aural infections. This communication, which bears the title "A Letter to Medical Men," cites some cases that appear strongly confirmatory of the mixed-infection theory of etiology. All of the reports are interesting. At least one of them is remarkable: it deals with a housemaid who suffered almost total deafness in one ear for twenty-one years and whose



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hearing in the defective organ was practically restored after eleven injections of Mixed Infection Phylacogen.

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To hasten convalescence from pneumonia the physician will find a substantial aid in Cord. Ext. Ol. Morrhuæ Comp. (Hagee).

Its distinctive service in inflammations of the air passages and the function it serves as a nutritive, entitle it to first choice as a reconstructive product, and for these reasons it is the agent *par excellence* in convalescence from pneumonia.

THE CONSERVATION OF NERVOUS ENERGY.

In the management of that character of nervous cases in which there is a great waste of nervous energy PASADYNE (DANIEL) will be found a thoroughly efficient agent. — Not only efficient but agreeable as well, for one of the most marked advantages of PASADYNE (DANIEL) is its freedom from evil or disagreeable consequences. As is generally known PASADYNE (DANIEL) is the distinctive name of a preparation of *Passiflora Incarnata* that has met the most exacting clinical demands of a generation of medical men. A sample bottle of Pasadyne may be had by addressing the Laboratory of John B. Daniel, Atlanta, Ga.

DISCRIMINATION IN CHOOSING AN ANODYNE.

The exercising of more than ordinary care in choosing an anodyne, particularly in the case of women and children, is quite essential. This is all the more so when it is remembered what distressing after-effects follow the use of some anodynes.

The fact that careful practitioners are partial to Papine (Battle) and continue to use it year after year indicates its superior features. Papine (Battle) affords a maximum of anodyne properties with a minimum of evil effects.

THE TRUTH ABOUT "POISONED NEEDLES."

Popular beliefs on scientific subjects apparently run in waves. Many will remember the interest in hypnotism which followed the publication of "Trilby." Svengali with his "hypnotic eye" at once became a real and possible personage in the public imagination. The newspapers were full of stories of girls and women who had suddenly been fixed and paralyzed by the hypnotic gaze of some stranger with piercing black eyes and who had been compelled by his will to fantastic acts which they were powerless to prevent. Fiction writers took up the idea, and stories cen-

tering around hypnotic influence became common. It was used as a plea in criminal cases, various culprits alleging that they had been hypnotized and compelled against their will to perform unlawful acts. All this occurred in spite of the fact that the limitations of hypnotism are definite and well recognized, that no person can be hypnotized unknowingly or against his will, and that few persons are so susceptible as to be capable of being compelled to perform acts beyond their own volition and knowledge.

THE WASHINGTON ANTIVIVISECTION CONGRESS.

The third Antivivisection and Animal Protection Congress has been in session in Washington during the past week. As the name indicates, the congress has represented two interests. So far as it was an animal protection congress, all could heartily support it, even the "vivisectors" themselves, for no men have done more to protect animals from pain and disease than they. But so far as it was an antivivisection congress it was hostile to the very means which have proved most potent for alleviating the suffering of man and the lower animals as well. Under these circumstances it is impossible to judge the value of the lists of bishops, generals, senators, clergymen, governors, members of Congress and other public men widely advertised as vice-presidents of the congress, because it is impossible to know on which aspect of this two-faced organization they were looking when they permitted the use of their names.

Most prominent among the foreign members was the founder of these congresses, the widely heralded Miss Lind-af-Hageby, whose false statements a decade ago cost Coleridge \$25,000 in his suit with Bayliss, and whose attempt this year to refute the charges that she was "a deliberate and systematic liar, and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood," resulted in a prompt verdict against her. Her present contention is that more is to be expected for human life and welfare from hygiene and sanitation than from drugs and surgery. That practically all the modern practice of hygiene and sanitation is firmly based on the results and methods of "vivisection" is a fact which she seems to have overlooked.

The Rockefeller Institute, which in the short period of its existence has given the medical pro-

fession an effective means of combating cerebro-spinal meningitis, a new method for the diagnosis of syphilis and devices for artificial respiration in anesthesia and shock, not to mention other important discoveries, was the chief target for vilification. It was designated by various speakers as a "chamber of horrors," as a "working model of hell," and as the crown of a "toppling mass" of wealth, "tainted by lying, stealing, arson and murder."

The most sensational claim made at the meeting was that not uncommonly physicians inoculate unsuspecting persons, often children and other dependents, with the germs of disease, solely for experimental purposes. This statement has been published with big head-lines in newspapers in all parts of the country. The evidence for it consisted in citing once more instances which have repeatedly appeared in antivivisection literature, and have repeatedly been shown to be false or without professional support. The "poisoning" of insane patients with thyroid extract was again mentioned, although the crafty deception in this charge has been made clear at least twice in the past twelve years. The spraying of the nose and throat of patients with "poisons of diphtheria, small-pox, scarlet fever or consumption" was again instanced, although it has been disclosed that the person who confessed to having done this had also confessed that he had no standing in the medical profession, and, indeed, was quite in agreement with many antivivisectionists in disbelieving that bacteria cause disease. The use of luetin was again described as the "inoculation of the germs of a vile incurable disease," although it has been carefully shown that luetin was first proved wholly innocuous by injections into animals and into the discoverer himself, as well as into other physicians who volunteered for the test, and not until then was used for diagnostic purposes.

The public should definitely understand, says *The Journal of the American Medical Association*, that the medical profession wholly repudiates and regards with abhorrence the employment of any procedure whatever which is in any way likely to injure rather than to benefit a patient who has entrusted himself, or who has been entrusted, to a physician's care. Such action would be absolutely at variance with the prime object of medical service—the welfare and the restoration of the sick.



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Fortunately, the lay press is beginning to understand the unreliability of antivivisectionist assertions. Various papers have commented on the "virulence and nonsensical folly" of the misstatements and misrepresentations of antivivisectionists, have recognized them "as peculiarly impervious to the facts," have asserted that they "wilfully hide the serious purpose underneath the experiments on animals," or have flatly declared that they are "promulgating the most outrageous falsehoods about men whose lives are devoted as unselfishly and as efficiently to the service of humanity as any that could be mentioned." Even one of the speakers at the congress was moved to urge his hearers to "stick to the facts" and to "cease making wild statements which they could not prove." Let us hope that some day they may do so.

Another popular fiction which later on took the place of hypnotism was that of instantaneous anesthesia. Stories appeared in the newspapers of women who had been accosted by strangers and, under some pretext, had permitted a cloth or a handkerchief to be pressed momentarily over their mouth and nose. Immediate unconsciousness was said to have followed, resulting in a period of insensibility and irresponsibility, varying from a few minutes to hours or even days. Chloroform sprayed into an open window by means of an atomizer, anesthetics tied to a rag on the end of a pole and thrown into a bedroom, instant unconsciousness following the administration of drugs unknown to physicians and pharmacists, were some of the variations of this idea. In the minds of physicians and nurses who see every day the administration of anesthetics, such stories only excite mirth. Any one who knows the difficulty and labor of securing unconsciousness through the use of anesthetics, even under the most favorable conditions and with every possible means of restraining and controlling the patient, knows how absurd such stories are.

A latter-day version of these popular beliefs, says *The Journal of the American Medical Association*, may be found in the "poisoned needle" stories which have been going the rounds of the press recently. A woman goes to a moving-picture theater, enters a crowded elevator, a street-car, or elevated train, or is caught in the press of a crowd. Suddenly she sees, close beside her,

our old friend the "mysterious stranger," with the piercing black eyes and the compelling manner. At the same time, she feels a sting and knows that she has been stabbed with a poisoned needle. She immediately becomes unconscious, dazed or irresponsible for a greater or less period of time, during which she experiences a number of marvelous adventures or hair-breadth escapes.

It is not possible to say that no woman was ever without her knowledge given a drug hypodermically which produced unconsciousness. It can, however, be said very positively that there is no drug known to scientific men which could be administered in the manner or which would produce the effect described in recent newspaper reports.

One of the laws of hysteria is that when any peculiar phenomenon is reported, similar instances immediately appear throughout the country. We may now expect a spring crop of magazine stories and popular novels based on the poisoned needle as a motive. Scientifically, the thing is as ridiculous and impossible as hypnotism of an unwilling subject or instantaneous anesthesia. Popular beliefs travel in waves, and hysteric and excited imaginations help them along. The history of popular delusions, from Salem witchcraft to present-day vagaries, is full of such instances.

SOME EXTREMES IN NUTRITION.

Amid all the discussion at present regarding the food requirements of healthy man it is interesting to compare the extremes which come to light in different parts of the world. Nothing can more effectively warn against dogmatic statements about our dietary needs than the recital of two entirely unlike experiences which have lately been published. The Danish physiologists, August and Marie Krogh, organized an expedition not long ago to investigate the dietary habits of the Eskimos at the island of Disco in Western Greenland. The normal ration of these people contains enormous quantities of meat. The eating habits of the Eskimo approach those of carnivorous animals. The periods are irregular and somewhat infrequent, the meal occasionally being extended to the utmost capacity of the stomach. Despite this we are told that no nutritive disorders are apparent aside from boils and

frequent nose-bleeding in the periods of over-liberal eating. The physical endurance of Eskimos nourished in this way is conspicuous, as in their resistance to the rigors of the climate. The highest food consumption actually measured by the Kroghs was nearly 4 pounds of boiled meat in one day. This is said to be far below a record figure, however.

The other extreme is reported by Hindhede in Copenhagen. His subject was able to maintain himself in excellent efficiency for months on a diet of potatoes and margarin. The amount of potato was extremely large, amounting to 4 pounds a day, which few persons could manage to consume day after day. When hard work had to be performed it was necessary to increase the potato to 8 pounds or more per day, with liberal additions of fat.

In the face of these extremes, says *The Journal of the American Medical Association*, one may well inquire whether many of the rigid rules and dietary dicta of physicians who adhere to "systems of diet" has a justification in fact. Obviously the adaptability of the human body to wide ranges of food possibilities is considerable. It

is, of course, desirable to learn the limits which one cannot overstep with safety. When once these are established, however, there is usually left free play for the application of common sense, judgment and individual preference in times of health and disease.

THE COST OF VENEREAL DISEASES.

There is no subject of more vital importance than that of venereal infections and means of combating them. Such freedom of discussion is possible as was unthought of a few years ago, and it is now advisable to take straightforward action in ridding mankind of these avoidable infections.

The prevalence of the scourge is known in a general way. The army hospital reports of the various nations are the most readily available and from them White and Melville have compiled a table showing the amount of infection per 1,000 men.

CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

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WATER SUPPLY FROM THE GREAT LAKES.

Advance sheets have been received of the report by experts of the International Joint Commission of the United States and Canada on the extent and causes of pollution of boundary waters of the two countries, appointed in order to fulfil treaty obligations entered into between the United States and Great Britain, Jan. 11, 1909. For investigations into the extent and causes of the pollution of boundary waters, the commission had the services of Dr. A. J. McLaughlin of the U. S. Public Health Service, Dr. J. W. S. McCullough, chief health officer of Ontario, and Dr. John A. Amyot, professor of hygiene of the University of Toronto. The field studies covered the period from April to October, 1913, and related to the waters of Rainy River, parts of Rainy Lake and the Lake of the Woods; that part of Lake Superior known as Thunder Bay; St. Mary's River, Lake St. Clair; Detroit River; portions of Lake Erie; the Niagara River; the western and eastern ends of Lake Ontario; the St. Lawrence River to Cornwall, and that portion of the St. John River which forms the international boundary line between Maine and New Brunswick. Seventeen laboratories were operated at different points, samples of waters were taken from 1,400 sampling-points, and more than 19,000 samples were examined bacteriologically.

The report shows that in certain localities in the Great Lakes and in all their connecting waters, dangerous sewage-pollution exists but that the bulk of the Great Lakes waters remains unpolluted. The sources of pollution in the order of their importance are shown to be sewage from cities, sewage from vessels, and the inevitable pollution due to the run-off from various watersheds following rains and thaws.

The distance that pollution may travel in portions of the lakes was also demonstrated. At the mouth of the Detroit River, serious pollution was shown to extend normally more than 10 miles into the lake, and at other places sewage-pollution was shown to extend as far as 18 miles from shore.

The distance of cities from zones of pure water in the lakes, the great cost of extending pipelines to these zones, and the engineering difficulties involved in placing intakes beyond a 70-foot depth make it impracticable in most instances for those cities to secure pure water from the lake

without treatment. The present positions of intakes are such that there is not a single municipality using water from the Great Lakes, or their connecting rivers, which can be said to possess a safe water-supply without treatment. As might be expected, the waters most grossly polluted are in the connecting rivers, along which are situated large cities.

Lax or inefficient methods of purification are shown to exist in certain places. In others, while purification is attempted, it is not properly checked by daily bacterial control. The report emphasizes the fact that methods of purification must be up to date and thorough or they are worse than useless, because they engender a false sense of security. To be thorough, the efficiency of methods of purification must be controlled by systematic examination of the treated water, and in order to be complete, reports on water-supply must be based on comprehensive sanitary surveys in order that sources of occasional as well as constant pollution may be known.

The report, says *The Journal of the American Medical Association*, merits careful study by every one interested in questions of public health, and is especially important to the people of the municipalities bordering on the Great Lakes. When the general public awakens to the danger which lurks in impure water-supplies, lax and inefficient methods of purification will not be permitted.

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from the man who wants us to help his lady friend out of trouble; from calls at two a. m.; from shoulder presentations; from optometrists and engine trouble; from the man who "can not add anything to the paper, but merely wants to compliment the essayist;" from meta-amidopenyl-paramethoxychinolin; from New Thoughts and mining stocks; from breaking catgut; from neurasthenics; from "the sponge we left behind us;" and from the dangers of tricresol 0.4 per cent.—good Lord deliver us. Amen.—*Lancet Clinic*, August 13, R. R.

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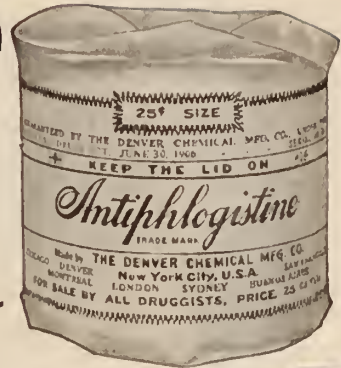
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The good that is accomplished in the way of promoting health, enjoyment and recovery from disease by the modern development of the seaside as a climatic and institutional agency is undoubted. One wonders, says *The Journal of the American Medical Association*, whether there is not a far greater opportunity for the development of some of our own natural coast

resources for the public welfare than has been assumed heretofore. The aim should always be to reach every group of our population, so that the less favorably situated as well as the more opulent might reap at low cost the advantages which a favorable climatic location has vouchsafed. Even if the seashore hobby were worshipped like a fetish, it could do little else than good; for whatever encourages the outdoor life of our people amid a hygienic environment is likely to be wholesome.

AVIATION DEATHS.

During the first three months of 1914, 38 men in all parts of the world lost their lives through the failure of their machines or the uncertainty of air currents, five of these deaths occurring in the United States. Since the death, in 1908, of the first victim of aviation, 462 men have been killed as the result of accidents while in the air.

THE DEATH OF GOLDSMITH.

Oliver Goldsmith, as our readers know, was a physician. At a meeting of the section in the history of medicine of the Royal Society of Medicine, held on January 28th last, Sir William Osler presiding, Sir Ernest Clarke, F. S. A., read a paper on the medical education and qualifications of the poet which is summarized in the *Lancet* for February 7th. Mr. D'Arcy Power, in discussing the paper, added that Goldsmith took sick in March, 1774, and went to a farmhouse to recuperate from an attack of dysuria; in addition to the prescriptions of his medical adviser, he dosed himself with James's powder, a preparation of antimony, in which he had great faith. He died in convulsions early in April. Mr. Power had submitted this history to Dr. Philip Hanil, who returned as a death certificate: "Old pyelitis. Bacillus coli septicaemia, complicated by an excess of antimony in the James's powders."—*New York Med. Journal*.

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It has been found, moreover, that the turpentine sold to country stores especially, as usually put out by dealers and manufacturers of grocers' sundries, is often short in volume by as much as 5 or 10 per cent. Dealers, therefore, should also protect themselves through a guarantee from the wholesaler that the bottle contains the full declared volume.

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Vermont Medical Monthly.

VOL. XX.

MAY 15, 1914.

NUMBER 5.

ORIGINAL ARTICLES.

ARTERIOSCLEROSIS.

BY

DR. JOHN GIBSON,

St. Albans, Vt.

Synonyms.—Chronic Endarteritis, Arterio-Capillary Fibrosis, Atheroma.

Definition.—A chronic inflammatory process affecting first the intima of the arteries, later the media and adventitia, accompanied by an increasing thickness of the arterial walls, and a loss in their flexibility.

Etiology.—These changes occur gradually as age increases—changes are variable in their tendency—depending upon many factors.

Heredity.—Over-eating and drinking, a life of high nervous pressure, excessive, prolonged muscular over-exertion, chronic diseases, namely: gout, diabetes, obesity, plumbism, syphilitic poisons, degeneration due to or occurring in the infectious diseases, primarily enteric fever, also in thyroid enlargement.

Clinicians differ as to the influence of renal diseases upon the production of arterial degeneration. It is argued that there are probably two types, one in which the arterial changes are primary, and the other in which the renal changes are primary. We are certain that increased tension may exist primarily in certain cases, and these later show unmistakable evidence of arterial degeneration.

Sarvada, Groedel and Tarranini agree on the statement that high blood pressure is not a condition essential to arteriosclerosis, and that arteriosclerosis may arise without great blood pressure. In amplification of this, they also claim that blood pressure is one of the earliest symptoms of kidney disease in arteriosclerosis. Also the same agencies which produce a hypersecretion or hyperacidity of the adrenals, are the same

which are known to produce arteriosclerosis. This is also true of degenerative changes in the thyroid, which normally antagonizes the adrenals by lowering blood pressure. Adami says that a disturbance in the ratio of blood pressure to strength of vessel wall is the cause of arteriosclerosis. This change may be produced by increased intravascular pressure or inherent or acquired weakness of the wall.

Important Pathology.—The morbid changes may involve the aorta alone or in connection with other groups or arteries, or the whole arterial system may be involved. The most common seats of arteriosclerosis are, however, the cerebral and coronary arteries. The visceral arteries are more seldom diseased. The pulmonary artery may be affected especially in connection with emphysema and mitral disease. When examination during life is possible as it often is in the temporal and radial arteries, an enlargement is visible; they are tortuous and sometimes beaded in appearance. Palpation finds the artery hard and movable under the finger. The smaller internal vessels may, on examination, show whitish patches of atheroma—the lining is rough and their calibre lessened.

These changes lead to cell infiltration, atheromatous abscesses, fatty degeneration with deposits of crystals of cholesterin. Aneurism may occur secondarily. The media and adventitia are involved after the intima and become infiltrated with connective tissue. Degenerations may occur leading to ulcers. There may be deposits of calcium salts in the new connective tissue growth.

Again, the media and muscular coat may undergo calcareous degeneration without other changes. This is the form known as the common senile lesion. Occasionally the muscular coat is destroyed, and a rupture of the elastic layer of the adventitia occurs, producing aneurysmal dilatation, which may be filled with thrombi (periarthritis nodosa). These nodules may be felt through the skin. The result of this process is the rigidity and narrowing of the lumen of the affected vessels, which causes a loss in elasticity, a slowing

of the circulating blood current and increased blood pressure. The result of this upon the heart is hypertrophy of the left ventricle. Eventually, the interference with the circulation brings about a defective state of nutrition of the heart, the parenchyma of the kidney, pancreas, and other viscera, producing eventually interstitial or atrophic changes in the organs.

Symptoms.—The superficial arteries may be observed to be enlarged, tortuous, and an examination with the finger may detect their thickened walls, and the increase of vascular tension. The physical signs of the left ventricular hypertrophy are present; the second sound is clear, sharp, and accentuated (an important sign). We must not forget that the arteries which are palpable may be quite normal while those elsewhere may be the seat of advanced disease. The pulse is hard and tense, and may be retarded. Huchard's sign is that, if hypertension is present, the pulse rate is not lessened by changing from standing to a recumbent position.

When the coronary arteries are involved a fibroid myocarditis or cardiac aneurysm, or sudden death from thrombosis, may occur and attacks of angina or cardiac rupture may be the final termination of the disease.

Arteriosclerosis of the cerebral vessels usually causes headache, dizziness, attacks of syncope, insomnia, and may predispose to the various conditions which result from insufficient blood supply to the brain.

Prominent among the ultimate results of cerebral arteriosclerosis is apoplexy in mild or severe forms, local paralysis of a temporary nature may occur, or aphasia, which may last for a few hours and entirely disappear (not explained). Also frequent attacks of epistaxis due to sclerosis of the vessels of the nasal mucous membrane.

Atheroma of the arteries within the kidneys results as in arterial nephritis. Gangrene in arteriosclerosis is caused by embolism or thrombosis in the terminal arteries of the extremities.

Diagnosis.—Arteriosclerosis is determined mathematically by the sphygmomanometer, hypertrophy of the left ventricle, by the sphygmograph, and accentuation of the aortic second sound by the stethoscope. The ophthalmoscope generally shows the wire appearance of the retinal arteries, and dilated veins with frequent retinal hemorrhages. Peripheral arteries, if calcification is marked, are often demonstrated by the roentgen

ray. These conditions with the symptoms already stated, define quite clearly the presence of atheroma. When, one may ask, does arteriosclerosis begin, and how may one meet the disease with a measurable confidence of partial success at least? The answer is "before positive symptoms are clearly manifested," for then the time is passed when treatment will bring no small degree of health to the patient and pleasure to the physician.

Dr. Louis Tanageres Bishop of New York, answers this question as follows: "Arteriosclerosis may be said to begin as soon as toxic material or physiological strain has brought about alteration in the habitual physiology or structure of the blood vessels. I believe the functional disorders of arteriosclerosis are of equal, if not greater importance than structural changes.

"The vast majority of cases, as they occur in adult life, are due to the indirect influence of intestinal putrefaction upon the blood vessels and nervous tissue. This is not an original theory with me, but it has impressed me so strongly that it has become a belief. The French discovered or rather popularized this theory. They talked a great deal about autointoxication, and Pasteur's pupils and successors, particularly those in France, told a very pretty story setting forth this theory, and it was a very plausible theory. The Germans turned it down without examination."

Bishop believes that all cases in which a urinary examination shows indican or indol, skatol, or phenol, one or all of the putrefaction group, are candidates for arteriosclerosis, if not already showing positive symptoms. If such putrefactive material continue to be excreted by the kidneys for a few years, he claims as the result, a damaged kidney, with albuminuria and hyaline casts. This is not always the first symptom. The myocardium often becomes involved first. The arteries usually last. In some cases, albuminuria, cardiac symptoms, neurotic symptoms are secondary; the blood vessels apparently first. In the early stages of this condition, when the toxic elements are active though excreted, and the structural changes have not taken place in the kidneys enough to increase blood pressure, these patients have low blood pressure because of the disturbance of the tone of the heart muscle, and the muscular elements of the blood vessels. The moment the kidneys become at all incompetent,

there is a tendency to high blood pressure.

Thus we have a vicious circle—we have the hypertrophied heart and blood vessels and the damaged kidneys. The kidneys and blood vessels are progressively damaged, and at the end of twenty-five or thirty years, the patient, who started with indicanuria, has changed into a typical case of Bright's disease, with hypertrophied heart and blood vessels, and liability to terminal apoplexy, uremia, or cardiac dilatation. This is the natural history of a case of arteriosclerosis.

Arteriosclerosis, says Bishop again, is synonymous with Bright's disease, and is the name of a general condition.

If there is a ray of truth in what Bishop and many of the French investigators say, may we not take a more hopeful view of cases suggesting arteriosclerosis?

If indican is diagnostic of autointoxication and autointoxication a predisposing cause of chronic endarteritis, may we not be justified in treating our patients for indicanuria when it is diagnosed and thereby remove what some authors hold to be the most direct primary cause of arteriosclerosis?

Indican in Urine (Source and Tests). *Source of Indican.*—Indican or potassium indoxyl-sulphate is found in the urine in increased quantities as a result of intestinal putrefaction, obstruction of the bowel, perityphlitis, appendicitis, severe types of constipation, peritonitis and severe suppurative processes in general. It is produced from indol-generatives within the intestines, and through processes of oxidation can be determined in the urine as indigo-blue.

Tests for Indican.—To a small amount of urine add an equal portion of hydrochloric acid; mix thoroughly, and then add, drop by drop, a freshly prepared 1% solution of potassium chlorate, taking pains to agitate and mix thoroughly with each drop until six to ten have been added; the addition of a few drops of chloroform and a thorough shaking will produce a pronounced blue color, ranging from light to almost black, depending on the quantity of indican present. If the amount is very slight the color change will be barely noticeable or even totally absent.

Jaffc-Stokes Test.—To a few c. c. of urine an equal amount of hydrochloric is added. This is well shaken with two or three drops of a strong solution of sodium hypochlorite. A few drops of

chloroform now extracts the indigo-blue which has appeared if indican is present in increased amount.

Treatment.—As suggested, a preventative treatment is possible only when the early diagnosis of autointoxication is possible. This would naturally be intestinal antiseptics, regulated diet and mode of life. In early stages, it ought to be impressed upon the patient, the relation he personally bears to whatever treatment is instituted. Exhausting mental and physical fatigue, and alcohol should be forbidden. Smoking, only in moderation or better not at all, cool bathing, frictions, and light exercise are available. Diet should be carefully regulated, meat reduced to a minimum (because of tissue forming elements and extractives). A mixed diet of milk, eggs, vegetables, and a small quantity of well done meat should meet all requirements. Buttermilk, if renal involvement is marked, is good. A limited amount of fluid should be taken with meals. Moderate climate and low altitude also are advantageous. Digestion should be kept normal, intestinal fermentation and constipation corrected if present. When venous congestion is present, calomel and salines are indicated. The continued maintenance of high blood pressure is perhaps not to be interfered with so long as compensation is easily maintained. Sodium and potassium iodide are recommended in doses of 1 to 5 grs., increasing to 10 or 20 grains 3 times daily, as toleration is established. The iodide treatment may be continued for a number of years with intermissions. This is presumed to lessen the formation of connective tissue within the arterial walls and promote absorption of that already present.

Hypertension, with dyspnea is greatly benefited by the nitrites. Tincture of aconite is also recommended, with caution. Trunck's artificial serum is also recommended. The substance contains the normal blood salts in proper proportion, and it is supposed to improve the nutrition of the arterial walls by rendering the blood more normal in consistency.

It may be given in tablet form, as follows:

Sodium chloride, $6\frac{1}{4}$ grs.

Sodium sulphate, $\frac{5}{8}$ gr.

Magnesium phosphate, $\frac{1}{4}$ gr.

Sodium carbonate, $\frac{1}{4}$ gr.

Sodium phosphate, $\frac{1}{5}$ grain.

Calcium glycerophosphate, $\frac{1}{5}$ gr. to each tablet, two of these to be given 3 times daily.

The feeble heart and palpitation of the latter stages should be treated by digitalis or strophanthus (less vasomotor constrictor).

Coronary arteritis should be treated much like angina pectoris; the renal type as interstitial nephritis; the syphilitic type with mercurials and iodides; the diabetic type as in diabetes.

Of late years we have been giving much attention to blood pressure, largely perhaps because of the improved instruments for taking it. It has become our great symptom for arteriosclerosis. Bishop divides blood pressure in 3 groups.

First.—Primary low blood pressure, usually constitutional condition in young people, neurasthenia, and debility. If toxic it is important.

Second.—The high pressure cases are those in which exists high blood pressure or a demand for it. These include cases in which the kidney demands high blood pressure for normal work.

Third.—Secondary low blood pressure is noticed in cases which had primarily a high blood pressure, and after a while the blood pressure is no longer maintained, but falls perceptibly from 10 to 20 points, though it may still be relatively high after the fall. The symptoms of the secondary fall are not unusual and consist of tenderness over liver, dyspnea, and general discomfort. The symptoms disappear upon the blood pressure rising to its high normal.

There is a suggestion here worth considering. We should not be too over anxious to produce a low blood pressure, by the injudicious use of nitroglycerin. The German habit of using the nitrites symptomatically in atheroma is worthy of mention. When then should the nitrites be employed in these cases? On the theory that there is continuous over contraction of the muscular elements of the cardiovascular system to keep up the blood pressure, we may surmise that there is liability that it might become exaggerated at one spot, thus resulting in a spasmodic contraction in that particular part. This of course is only a theory, but a plausible one, and may explain the shortness of breath, the temporary hemiplegia, attacks of cardiac pain and pain in the extremities. In these cases is the indication for the use of the nitrites and persons having such attacks should be provided with nitroglycerin tablets, and directed to take them when such symptoms are present.

At such times it does no harm by interfering with blood pressure. What then may we conclude in this matter of arteriosclerosis?

First of all have an eye out for conditions which predispose toward it.

Second.—Examine every case of intestinal putrefaction; of constipation; every case of a rising blood pressure; of suggestive renal symptoms and the like, for possible atheroma.

Third.—Whenever indican is present there is toxemia, and where there is toxemia there will be, eventually, arterial and renal changes, if the conditions producing it are not removed.

Fourth.—When arteriosclerosis is unquestionably present let us determine its type, if possible, and treat it accordingly, not over treating it.

Fifth.—There should be no hesitancy on the part of the physician in making clear the dangers of the present moment, and the inevitable conclusion of the whole matter, if he, the patient, refuses to adhere strictly to the demands of the case. This may be done with wisdom and sympathy. This may also avoid misunderstanding later.

In a very interesting article by Dr. Gustav Baar of Carlsbad, Austria, read before the Medical Association of Greater New York, March 16, 1914, and published in the *New York Medical Journal* of April 4, 1914, Dr. Baar defines indicanuria as the abnormal excretion in the urine of potassium indoxyl sulphate. According to Jaffé, he says, we find physiologically, in the 24 hours urine from 4.5 to 19.5 mg. of indican, in which quantities it can hardly be determined by the usual tests.

It seems proven beyond a doubt that the indican is derived from indol found mostly in the gastrointestinal tract by nitrogenous putrefaction; that the nucleus of the indol group, tryptophan, is converted into indol by the aid of putrefactive processes.

Dr. Baar goes on to state that indicanuria is the expression of gastrointestinal autointoxication, and to cite diseases which seem to result from its presence, or to prove that its presence is indicative of some definite lesion. Some 2,600 cases form this series.

Thus it would seem that the latest and most exhaustive experiments in the study of indicanuria, substantiate the earlier ones, by Bishop and others.

AN APPEAL TO CANCER RESEARCH INSTITUTIONS.

BY

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The seventy or eighty thousand deaths that annually occur from cancer in the United States (to say nothing of other countries) are so many thousand reasons why any investigation that affords the slightest hope of demonstrating the origin and prevention of this disease should be undertaken by our Cancer Research Institutions. Much has already been done in this direction, but the real origin of cancer still remains an unsolved problem. My purpose here is to plead for investigation along new lines; and in a manner that has not yet been tried.

My idea is that cancer is produced by the conjoint influence of two etiological factors, viz.: 1. Abnormal modification of epithelial cells by *long-continued irritation* whether chemical, mechanical, thermal or otherwise. 2. *Fertilization of these modified epithelial cells by spermatazoa*, or sperm. Neither factor *alone* can produce cancer: both must act conjointly.

In accordance with this hypothesis I have endeavored to explain the origin of cancer of the uterus, breast, stomach, testicle and rectum: also Kangry-burn cancer, chimney-sweep's cancer, syncytial cancer and Bilharzian cancer. It must be understood that my theory refers to "Cancer," as that term is now understood by pathologists—not to "sarcoma."*

So far there has been no word of criticism against my views; and some of my *confreres* agree that even though the theory may possibly not be true, it has at least been presented in a sufficiently plausible manner to merit experimental investigation. Hence this appeal.

While I should perhaps not presume to suggest methods of experiment to those engaged in cancer research work who know, better than I, how it should be done, nevertheless, may I not strengthen this appeal, by accentuating how very easily the tests could be made?

Thus, if the experiments of Dr. Rohdenburg (*George Crocker Special Research Fund, vol. iii,*

*See "Washington Medical Annals," vol. xii, No. 2, March, 1913. "Surgery, Gynecology and Obstetrics," vol. xvii, Sept., 1913 (Chicago). "Trans. Amer. Gynecol. Soc.," vol. xxxviii, May, 1913. "The Urologic and Cutaneous Review," St. Louis, January, 1914. "The Washington Med. Annals," March, 1914.

1913, p. 75) in which he kept iron rings in the ears of rabbits for a month, to test the effects of chronic irritation, in producing cancer, had been modified by the application of sperm to the irritated tissues, it would have shown the result of the *two* conjoint factors which I maintain are absolutely necessary for the production of a malignant neoplasm. His results were completely negative: no signs of cancer were found at autopsy; and, according to my view, necessarily so. Chronic irritation *alone* can never initiate an *embryonic* development of epithelial cells: for this purpose, *sperm* is necessary.

Rohdenburg's further experiments of placing masses of "dried emery," and of "fine iron filings" in a pocket in the inguinal folds of normal rats, were again negative. The foreign bodies produced "irritation," but no cancer. If sperm had been added, and the animals kept alive, the result might have been different.

Any artificial wound on the skin, kept open for several weeks or months, and then treated with sperm, would suffice to test my theory. It would be better, however, that the animals were mature, or over-mature, and *not* pregnant.

In experimenting with human epithelial cells, already modified by "continued irritation," such cells could be obtained by curetting old cases of chronic inflammation, laceration and erosion of the cervix uteri, or living cells could be found in the vaginal discharges in such cases, which, on being kept alive under suitable conditions, and mingled with sperm, would perhaps show the whole process of conjugation, mitosis, and the production of pseudo-embryonic cells characteristic of cancer.

In the human mind there is a *normal* hostility to new ideas. If it were otherwise the foundations of all sciences would be continually disturbed by the theoretical vagaries of imaginative thinkers. Yet we must not forget that speculation and imagination are very often the pioneers of discovery, and a normal hostility to new concepts should not be allowed to obtain an *abnormal* persistence. And, further, when we consider how much is involved in the cancer problem, and how fruitless have been all previous attempts to unravel the secret of its origin and prevention, it would seem proper that *any* speculation, having even a moderate degree of plausibility, should be worthy of experimental investigation.

Regarding cancer as an abortive embryonic new formation, resulting from the fertilization

of somatic epithelial cells by sperm: in order to develop this formation artificially in the laboratory, we should probably have to provide, as far as practicable, the environing conditions that normally obtain in physiological embryonic evolution. That is to say: there must be suitable conditions of temperature and nutritive pabulum, also protection from *air* and probably from light. Hence the mere *application* of sperm on the *surface* of a chronic ulcerating region may fail. The sperm should be placed *beneath* the surface, by injection, or buried in a shallow incision, so as to be protected from air and light. There is no case, so far as I know in which mammalian embryonic evolution occurs under exposure to air and light.

1315 Mass. Ave., N. W., Washington, D. C.

A CASE OF HYSTERO-EPILEPSY WITH RECOVERY AND COMMENTS ON PSYCHANALYSIS.

BY

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The history of the patient which I am about to narrate in this article presented nothing remarkable, up to the time she came to the sanitarium; in fact, up to that time and for some period afterward the history in a general way, might have been that of many other cases of hystero-epilepsy but the facts which make it interesting and instructive have to do with the influence which the patient's mind had upon her condition and the means that were taken to bring about that mental attitude, which once assumed, hastened so materially her recovery.

The anamnesis or history of the case is as follows:—Patient's father died at 78 of pneumonia, had always been healthy; mother still living at 63, and in good health; two brothers are living, and present normal conditions, and one brother died of pneumonia at the age of 35. Grandparents, both paternal and maternal, lived to a good old age; no history of insanity or epilepsy in the family; patient had three children, one still born; no miscarriages, all labors normal. As far as could be determined, patient's girlhood was normal; nothing unusual at school; passed on to womanhood without manifesting anything extraordinary until about five years ago when had

first convulsion, being apparently brought on by emotional collapse on the death of a brother after severe nervous strain of caring for him. This convulsion was described as a spasm, merging into a complete condition of rigidity lasting two days. A period of three years then elapsed with no other manifestations of the trouble, when the condition of rigidity again appeared as described by her physician: "pain in back along spine more severe in cervical and lumbar regions; legs cramp, one arm generally across chest; neck rigid; eyes closed; jaws clinched." This condition would usually last for two or three hours when the muscles would relax, "respiration shallow, pulse slow." Between these attacks, the patient would be able to get about the house to do her ordinary work, but felt unable to raise feet from floor and just "scuffed along," in addition to this complaint had periods of inability to open mouth or speak, one of these lasting eighteen hours.

Our patient had always been a hard working woman and had succeeded in holding a responsible position for many years. Previous to coming to us she had been treated by her physician with no apparent beneficial result and on consulting with a prominent Boston neurologist, her physician was advised to try hypodermic injections of apomorphia and an injection of one-tenth grain was given. The muscles relaxed in nine minutes after the first injection; in six minutes after the second; and in three minutes after the third. Her physician therefore had strong hopes of benefiting her by this method but after a very thorough trial, it was given up and a decision was made to send the patient away for treatment to a sanitarium.

On her admission to the institution required a carrying chair to get to her room, and experienced much difficulty in doing anything for herself. Had a slight convulsive seizure that night but this was not observed; appeared to be well nourished and rather inclined toward stoutness, with florid complexion, and gave one the impression of her being in a perfect state of health. She walked with great difficulty and apparently was unable to lift feet from floor, this being more marked on right side. Patient's appetite was good and generally appeared in excellent spirits except for considerable mental depression after an attack. The second convulsion after admission continued about two hours and was closely observed. She appeared to be conscious of her

surroundings, understood conversation and would always answer any question by a nod of her head. Began our treatment of the case by giving a general tonic three times daily and dormiol (Mercks) and potassium bromide at night combined with large draughts of milk for the persistent insomnia and nervousness; massage night and morning with cold douche to spine with brisk friction rub upon getting up to breakfast; static electricity using positive head breeze three times a week and continuing from 5 to 10 minutes, given preferably at about bed time. After two rather more severe convulsive seizures than we had previously seen, there elapsed a period of three weeks during which there were no similar manifestations, patient coming to her meals regularly and appeared in excellent spirits.

Desiring at about this time to try the power of suggestion, an attempt was made to impress the patient's mind with the idea that her malady was not a serious one. With this idea in view, the nurse was told to cooperate and assure her that the convulsive seizures were not dangerous and could be easily remedied, that she would get rapidly better by following out the treatments installed and that her case was not an unusual one. As a result of this method we were convinced that she came out of the next seizure more quickly and from the next one—which was the last—she emerged very rapidly when left entirely to herself. So by keeping up an apparent indifference as to the seriousness of her case and at every visit to persistently make light of her anxieties and complaints and at the same time to insist she was doing very well, she finally recovered from the convulsive seizures as described and only on a few occasions did she exhibit a tendency of fear that “she was going to have one.” She thereupon began to walk about some without much assistance and soon was able to walk up and down stairs and otherwise behaving in all respects as a normal person should.

To recapitulate a little, it may be of interest to some to learn that in this case we had the typical subject for psychotherapy and that the net result of urgent suggestive measures when combined with electro-therapeutics was beautifully demonstrated in this case on many occasions. For instance when on occasion she was brought to the office for treatment in a carrying chair or otherwise assisted by a strong nurse, she would be able to help herself

considerably after the electrical treatment, and on some occasions was able to step down from the insulated platform of the static machine; on another occasion on coming to the office in an apparently weak state, actually stepped down from the platform and walked upstairs to her room without assistance or scarcely an extra effort. However, this apparently normal state did not maintain itself, for the next day or so she would be down again and required a lot of urging and “jollyng” on the part of the nurses before she could be induced to make an effort of the will and so establish an initiative. She was told repeatedly that by an effort of the will she could control to a great extent the spasms that she had been having and that if she felt such a condition impending, it was and would be entirely within her power to prevent it if she only tried hard enough. After hammering away at this thought for sometime, she thereupon so stated herself that she was conscious of doing this on one or two occasions and later on she became so thoroughly convinced of her own power in this direction that she openly expressed herself “I never shall allow myself to have another.”

In closing my paper, I feel that there is one fact above all others which should not be lost sight of, the truth of which we were thoroughly convinced of by the study of this case, and that is that we are too apt to allow sympathy to govern us in the treatment of these conditions. It is sympathy that the patients crave, and to obtain it they will drift consciously or unconsciously into the condition which they think demands it. If they find they attract no especial attention by reason of their symptoms or behavior and are told repeatedly that the symptoms or complaints are of no especial consequence or import, we are leading such a neurotic a long way on the road to recovery if we follow it up promptly with the judicious and skilful use of drugs and modern apparatus.

However, I do not wish to be too radical in this view and say that there are no cases of this nature demanding sympathy for such is not the case. Dercum aptly says in a recent work “an hysterical patient is frequently jealous of her symptoms and is anxious that the physician shall be impressed both with their severity and with their reality and it is many times a mistake to minimize them unduly,” and again in another paragraph, “the patient will come to the conclu-

sion that the physician does not understand her case nor appreciate her condition." Under such circumstances, of course, it would be probably unwise to make light of the condition, but in the great majority of such cases, expressed sympathy as is frequently given by the physician may be a prominent stumbling block to the treatment to obtain the best results.

Finally then we may say that the procedure in a given case must depend largely on the *individual treatment* and the amount of mental force and injective assurances one may be able to give the patient at each daily visit, or during the repeated efforts at effect with the static machine or high frequency coil, always bearing in mind the possibility of giving these sufferers an up-lift in self control which may result in a nearer approach to the normal. Treatment with apparatus or otherwise in the hands of the best of trained, experienced nurses does not do the work as it should, owing to the patient soon losing confidence because of the lack of interest on the part of the nurse or the want of positive assertions as to their progress.

We cannot leave the treatment of hysteria without making certain comments on our conception of the theories and methods of psycho-analysis as applied to this case. In the first place I have no doubt as to the value of such methods as Freud teaches when in the hands of skilful psychologists and clinicians who do not have to consider the value of time or the feelings of the patient. It has been almost impossible for me to elicit a sexual basis on which to fix the underlying cause of any of my patients of this type. It may be that such sexual psychopathias exist in the innermost recesses of the minds of these individuals but we have failed to bring out these morbid states. Other workers in this field of medicine have expressed themselves strongly by objecting to the placing of either the patient or the physician in a quasi-sexual position in order to bring out the answers and inquiries they wish us to secure. It is needless to say that our patients do not take kindly to these interrogations of the Freudians and it is no wonder that it often results in sacrificing the confidence of the patient and leads our effort into a wrong channel of thought. It is difficult to believe that all convulsive spasms in hysteria may be merely sexual equivalents or libido and as far as an experience of seventeen years in daily contact with

all sorts of nervous and mental diseases goes, there have never to my own mind been facts sufficient to warrant such a wide sweeping generalization.

The difficulties of following up such a method as psycho-analysis (since it sometimes takes years to secure the facts) are obvious. A great deal of time and trouble is involved and the nature of the investigation is not pleasant. Whatever doubts we may have as to the reality of results given by this method, there is little question as to its value in throwing light upon the evolution of symptoms and the pathogenesis of the neurosis. The physical history which this method is bound to deal with is of course of the utmost importance if the nature of any malady is to be understood. The work of Freud undoubtedly demonstrates that certain forms of mental disorder may arise solely from psychical disturbances and this view is one which has in recent years been overshadowed for sometime by the opinion that toxic changes were the only causes worth considering.

THE PLAGUE IN HAVANA.

There have been five cases of plague in Havana during the present outbreak. In order to put an end to it Dr. Juan Guiteras, the Director of Sanitation, has ordered that sixteen blocks in the infected portion of the city be closed for several days while the rats in the district are being killed.

Give magnesium sulphate with the potassium iodide administered in the treatment of lead colic.

An anodyne plaster for the treatment of renal colic is recommended by Raymond, and composed of the extracts of opium, belladonna leaves and conium, of each 2 parts; camphor, 5 parts. Combine thoroughly.

Medical Sentinel recommends, in the treatment of gastric atony, the following: magnesii oxidi and cretae praeparatae, of each 4 drachms; calumbae pulveris, 15 grains; vanillae, 7½ grains. One-half drachm before meals.

—*Medical Council.*

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H. C. TINKHAM, M. D., }*Editors.*
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EDITORIAL.

More and more as the country grows older and the ease of travel tends to dissolve state lines is the urgent necessity of uniformity and simplification of state laws forced upon us. In no field is this more necessary than in that of public health. Our present laws are the result of an attempt to meet the rapid increase in our knowledge of this important subject and from their very method of development are necessarily a patchwork, added piece by piece, by well meaning legislators to meet the various new theories as they have arisen. Placed upon the books with honest purpose to suppress disease, some of them have had their wisdom proven, others are now anachronisms based upon theories no longer tenable. The wisdom of this legislation as a whole, imperfect as it is, is amply shown by the results which have been achieved. Thus, since public statutes commenced to be placed on our statute books, the death rate from tuberculosis in the United States has been reduced 54%. Two hundred thousand lives have been saved from death by this disease. The death

rate from scarlet fever has been reduced from 54 to 6 per hundred thousand. Diphtheria from 117 to 18 and typhoid fever from 34 to 16 per hundred thousand. But now that our knowledge of prevention has reached such a degree of accuracy, it is time that public health laws should be revised, simplified and unified. Our own state is no worse than most and much better than many because its legislation on these subjects has been directed by a wise board of health which has been little affected by political changes but there can be no doubt a thorough reorganization of our public health machinery in the light of present advanced knowledge, and with the public demand for efficient administration would be largely advantageous. Thus the laws pertaining to the transportation of the dead may well be modified, and more efficient laws relating to morbidity reports should be passed. Some changes in the central Health Board organization are desirable but most of all what we need is the full time health officer. Such efficient public health administration as the people have a right to expect depends as has been well expressed by Asst. Surg. Gen. Rucker, on the three fundamental necessities. "The *man*—the well trained, well remunerated, full time health officer; the *power*—the intelligent, uniform, accurate law and the adequate appropriation; the *knowledge*—of the location and prevalence of disease" (furnished by morbidity reports). Our present health officers are in general an efficient body of men, actuated by high purposes, but they are men whose incomes depend largely on business or professional work carried on in the town in which they live, and in which they are required to exercise their official jurisdiction. Often times efficient enforcement of public health laws can only be accomplished by an actual and immediate pecuniary loss. It redounds greatly to the credit of these men that in spite of this, the service is so often well performed. But it is too much to expect conscientious men to hold these positions for any length of time. The eventual outcome is that their efficiency must be lowered or they

must be forced to resign in self defense. Again quoting Rucker, "Eternal vigilance is the price of freedom from disease." The epidemiologist must devote all of his time to his official duties. In epidemiology (and this might be broadened to include all public health administration)," no man can serve two masters." Therefore, public health officials must be full time men. They must be adequately salaried.

* * * *

In the end it will be found that the employment of properly trained public health officials at adequate salaries, is a measure of economy. The inefficient health officer wastes public funds in poorly directed efforts and he does not accomplish results. The health officer who has been well trained knows what to do and when to do it, and he accomplishes things with a minimum of friction and expense. In Vermont the health officer should be a county or district official appointed and answerable to the central health authorities, and his salary should be commensurate with the territory and population over which he presides, and paid by the state. Thus he would be removed from local influences and could fearlessly discharge his duties without regard to fear or favor. That such a service would be an actual saving of money for Vermont aside from materially increasing the efficiency, we have not the slightest doubt. When it is known that over thirty-one thousand dollars was paid to town health officers aside from the registration fees during the last twelve months, it can be readily seen that this is not an idle statement. Several states have adopted the full time health officer already, and many are contemplating such a measure. Vermont has always prided itself in being in the forefront in health matters and we trust that it will maintain its reputation by early consideration and adoption of the full time health official idea.

The third volume of the quarterly of the Federation of State Medical Boards of the United States has just been issued. This organi-

zation is formed of members of the various state boards of medical registration and has for its object "to develop and maintain reasonably high and uniform standards of medical licensure in the United States. * * * * To obtain accurate knowledge of the standards of preliminary and medical education; the rulings adopted and methods employed by the medical boards of the various states of the country and of their counties; to publish a bulletin by which this information may be disseminated among the members and to further interstate endorsement of medical licensure." Thus it will be seen that this organization has among its membership the real and only authority which can set standards for medical education, and maintain these standards. It is the organization upon which the council of medical education, the Carnegie Foundation and any other medical educational body covering a national field, must receive its backing. Twenty-six state boards are already members of the federation and others are likely to join. The present issue of the journal contains the following papers presented at its annual meeting held in Chicago, February 25th, 1914:

Medical Education and Practice in Russia, by Julius Halperu.

The Professional Requirements of a Medical Officer of the United States Navy, by Charles F. Stokes.

A Federal Licensing Board, by Manford M. Clapper.

A Model Practice Art, by H. Sheridan Baketel.

Proceedings of the Second Annual Conference of the Federation: Public Health Administration, by Asst. Surg. Gen. W. C. Rucker, U. S. P. H. S.

Discussion, by Drs. Witherspoon and Vaughan.

Should not the Federation of State Medical Boards of the United States Adopt a Uniform Minimum Curriculum for Medical Schools? by J. L. Heffron.

Discussion by Drs. Scudder and Baldy.

The President's Address, by Dr. Charles H. Cook.

Some Thoughts on the Standardization of Medical Education, by Dr. H. C. Ernst.

Discussion by Drs. Jacobi and Codwell.

The Use of the Government Medical Services in Raising the Standard of Medical Education, by Lt. Col. John R. Kean, M. C. U. S. A.

Discussion by Drs. Wilcox and Rodman.

These articles are of extremely high grade; deal with matters of tremendous importance and are presented to this organization which is all powerful in its influence on medical affairs. All who are interested in medical education and medical licensure should subscribe for the journal. We bespeak for it a wide circulation among thinking men.

THE UNIVERSITY OF VERMONT COLLEGE OF MEDICINE ANNOUNCES THE FOLLOWING PROGRAM OF POST GRADUATE INSTRUCTION.

Dear Doctor:—

The University of Vermont College of Medicine has given a course of Post-Graduate work for several years for the benefit of the physicians of the state.

It has been suggested that it is difficult, if not impossible, for a large number of physicians to leave their patients for one or two weeks, and to meet this condition it has been arranged to have week-end clinics through the month of May. The schedule has been arranged for Friday afternoon and evening and Saturday forenoon to meet the convenience of those desiring to attend these clinics.

Arrangements have been made with Dr. A. F. A. King, of Washington, D. C., for one address; and with Dr. F. H. Albee of New York City, and Dr. G. R. Pisek of New York City for clinics in their special departments. Dr. Albee is now in Europe demonstrating his operation for bone transplantation in the treatment of deformities of the spine. He will demonstrate this operation at the clinics here.

A discussion of border line cases, or when a stomach condition should be a medical case and when a surgical case, will be of special interest.

Interesting clinics on special subjects have been arranged for and it is hoped that physicians may

be able to take advantage of these clinics which are free.

Very truly yours,
The Medical Faculty.

Friday, May 8th, 1914.

- 2.00 p. m. Medical Clinic.....Dr. Beecher
Mary Fletcher Hospital.
- 8.00 p. m. AddressDr. King
Medical College.
- Refreshments.

Saturday, May 9th, 1914.

- 10.30 a. m. Surgical Clinic.....Dr. Wheeler
Mary Fletcher Hospital.
- One case of Goiter and other interesting cases.
- Friday, May 15th, 1914.
- 2.00 p. m. Pediatric ClinicDr. Pisek
Mary Fletcher Hospital.
- 4.00 p. m. Ophthalmological Clinic, Dr. Twitchell
Mary Fletcher Hospital.
- 8.00 p. m. A Symposium—Borderland Cases,
Drs. Tinkham, Allen, Shea and Beecher
Medical College.
- Refreshments.

Saturday, May 16th, 1914.

- 10.30 a. m. Gynecological Clinic, Dr. McSweeney
Mary Fletcher Hospital.
- Friday, May 22nd, 1914.
- 2.00 p. m. Pediatric Clinic.....Dr. Johnson
Mary Fletcher Hospital.
- 4.00 p. m. G. U. ClinicDr. Townsend
Mary Fletcher Hospital.
- 8.00 p. m. Lantern Slide Illustrations
—Orthopedics.....Dr. Albee
Medical College.
- Refreshments.

Saturday, May 23rd, 1914.

- 10.30 a. m. Orthopedic ClinicDr. Albee
Mary Fletcher Hospital.
- Friday, May 29th, 1914.
- 2.00 p. m. Medical ClinicDr. Jenne
Mary Fletcher Hospital.
- 8.00 p. m. AddressDr. Sears
Medical College.
- Refreshments.

Saturday, May 30th, 1914.

10.30 a. m. Surgical Clinic. Dr. Tinkham
Mary Fletcher Hospital.

Laboratory instruction will be given to those who desire it in such subjects as may be chosen and at such hours as may be arranged for throughout the month.

A full week's program will be offered sometime in July, details of which will be mailed you later.

These courses are offered without fee to physicians and all are cordially invited to attend.

A bill which is now before Congress to establish a bureau for the study of the criminal, pauper, and defective classes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress:

Section 1. That there shall be established in the Department of Justice a bureau for the study of the abnormal classes, and the work shall include both laboratory investigations and the collection of sociological and pathological data, especially such as may be found in institutions for the criminal, pauper, and defective classes. Said bureau and work shall be in charge of a director, who shall be appointed by the President, by and with the advice and consent of the Senate, and shall receive a salary of \$3,000 per annum. He shall make a report once a year, directed to the Attorney General, which, with the approval of that officer, shall be published. For the aid of the director there shall be one psychologist at \$2,000 per annum, one translator at \$1,400 per annum, two clerks at \$1,200 each, and one stenographer and typewriter at \$1,000.

Sec. 2. That the director, if necessary for the proper discharge of his duties, may place himself in communication with State and municipal and other officials of this and other countries.

Sec. 3. That for the proper equipment of and carrying on the work of said bureau, the temporary employment of specialists, and the purchase of instruments of precision, books, and periodicals, and rental of rooms, if necessary there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$5,000 or so much thereof as may be required.

A STUDENT'S VIEWPOINT OF THE SITUATION AT THE UNIVERSITY OF VERMONT COLLEGE OF MEDICINE.

There has, of late, been considerable said and written regarding the University of Vermont College of Medicine, and the report made on it by the Carnegie Foundation Survey.

It seems as though the views of a man who has for four years been a member of the student body, backed by actual knowledge, and authoritative statistics would be of some interest.

I first want to speak of the relationship existing between the faculty and the student body.

A man is in college only a short time before he feels the real personal interest of the professors in his work, and in him, personally. This spirit is bound to bring about a sense of loyalty and result in more diligent work on the student's part. I speak not for myself alone, but for the student body to a man, when I say we have absolute confidence and satisfaction in the ability of the men who are our teachers. These men have been accused of being inbred in the college, but, there is scarcely one who has not done work in the hospitals and clinics of large cities, here or abroad, and to call them inbred is unjust.

I have talked with men who have come here after having spent one or more years in other colleges, and the consensus of opinion is that they are satisfied with conditions here and that the theoretical teaching received is almost unexcelled anywhere.

The showing of Vermont graduates before the various state boards, where we rank with Rush, Johns Hopkins and Harvard, is sufficient argument against the statement that men have come here because Burlington was "one of the easiest places in New England to obtain a medical degree." I find that the number of weeks required each college year at Johns Hopkins is 33, at Jefferson 34, at Harvard 35, at University of Vermont College of Medicine 36, showing that we put in as much time as other leading colleges.

Beginning with my second year, I have had from 36 to 44 hours of college or hospital work each week, besides outside preparation.

It is true that our clinical needs are not as well provided for as could be wished, but this condition, as I will presently show, can be remedied. Obstetrics is mentioned as being a subject in which clinical material is particularly

lacking. In regard to this I would say that a free maternity ward was opened at the Mary Fletcher Hospital in June, 1913, and to date there have been over 50 cases attended. I myself have so far been on several obstetrical cases and as the free ward is less than a year old, and is becoming more widely known all the time, it seems reasonable to expect that the needed material will be supplied.

In the line of children's diseases, besides a good number of cases seen at the dispensary and in the city, we have thus far this year had the privilege of observing, week by week, about 50 infants at the nursery run in connection with the Home for Friendless Women. There is also an opportunity for observing about three hundred children at the St. Joseph's Orphan Home and the Home for Destitute Children.

Then we have our free dispensary, and ward work, every afternoon, sections of the class being assigned. Our clinics are as follows: Tuesday morning, medicine; Tues. p. m., eye, ear, nose and throat; Wed. a. m., surgery; Wed. p. m., neurological; Thurs. a. m., gynecology; Thurs. p. m., genito-urinary diseases; Fri. a. m., medicine; Fri. p. m., eye, ear, nose and throat; Sat. a. m., surgery. The Report presents the following figures of admissions to the medical college:

- 55 entered in 1909.
- 47 entered in 1910.
- 40 entered in 1911.
- 12 entered in 1912.

The Report states further that "the admissions to the medical school were plainly decreasing even before the higher entrance requirements went into effect." The Report also says: "It is clear that when the full entrance requirement of two years of college work goes into effect, the school must accept an entering class certainly not larger than ten, and that it can scarcely hope to graduate each year more than four or five doctors, the majority of whom will probably come from outside of Vermont."

Bearing the above figures in mind, it is very instructive to read the statistics regarding the number of medical students and number of medical graduates, as printed in the *Journal of the American Medical Association*, Aug. 23, 1913.

These statistics show that the total number of medical students, excluding special students, in U. S. in 1904 was 28,142, and for the year ending June 30, 1913, was 17,015, making a decrease

of 11,127 in the number of medical students since 1904.

The total number of medical students graduating in U. S. in 1904 was 5,747, and the total number of medical students graduating in 1913 was 3,981, or a decrease of 1,766.

Total attendance 191428,142

Total attendance 191317,015

or a decrease of 39.5% in the total number of medical students.

At the University of Vermont College of Medicine there were in

1904213 students

1913140 students

or a decrease of 34.2%.

The total number of graduates in U. S. in 1904, was 5,744, and in 1913, 3,981, or a decrease of 30.7%.

Now the graduates of U. V. M. medical in 1904 were 55 and in 1913 there were 37, or a decrease of 32.7%.

It seems to me that these statistics show that the decrease in the number of students at the College of Medicine is only a natural part of the decrease throughout the country, and while the decrease as a whole is 39.5%, that of the U. V. M. medical is only 34.2%.

The present premedic class including those working for two degrees, numbers about 30 men, largely from Vermont, practically all of whom will study medicine in Burlington; so our entering class for 1914, taking into account those who come from other colleges will be reasonably large, probably between thirty and forty-five men.

The Survey asks the following questions: (1) Can a modern medical school be developed in Burlington? (2) How much would such a school cost conducted upon a sound plane of medical teaching? (3) Is the state justified in spending the money necessary to maintain such a school?

In answer to question one, let me say that five of the 24 medical colleges rated in class A+ are in cities ranging in population from 6,765 to 36,981; and the number of students is from 45 at the University of Missouri to 284 at the University of Michigan. These figures are from the *Journal of the American Medical Association*, Aug. 23, 1913.

Burlington, and Winooski adjoining, have a population of about \$30,000. Is there any reason why if given a chance a modern medical school can not be developed here as well?

Now as to question two. I shall not try to answer this as the finances needed must be decided after plans for development have been settled upon, but I feel sure that the people of the state, through our legislature, will grant funds necessary for additions needed.

Is the state justified in spending money necessary to maintain such a school?

Each year the college renders to the state, through its clinics, over \$200,000 in free service. If the college was not in existence this would not be rendered.

The presence of a medical college in Burlington gives Vermont a medical center, and acts as an inspiration to practitioners throughout the state, and results in better service to the people, and here every spring all Vermont doctors may come for two weeks of post graduate work and so keep better acquainted with medical progress. Dr. W. Scott Nay, Secretary of the Vermont Board of Medical Registration, states that 463 out of 671 doctors of medicine in Vermont, graduated from the U. V. M. College of Medicine. He does not believe that graduates of the larger city colleges will settle in the smaller Vermont towns except temporarily, and also says that the country physician question is getting to be a matter for serious consideration, for with the present limited number of graduates, country towns must suffer for want of competent practitioners. Already the fact is noticeable and will soon be a serious problem for state boards to solve.

There are at present several smaller towns in the state with no physician and if the medical college should be abandoned there would soon be many towns suffering for want of a doctor, for a man grown used to city environment is unwilling to locate in a small town or village, and take the long drives necessary, with compensation less than in a larger place.

The Journal of Education, a high educational authority, in speaking of the Vermont Survey as a whole, and of the Vermont people, says "as though it were not enough to discover polecats instead of blooded sheep that lead the world, they see every polecat double, triple, or quadruple. For this no one can with self respect apologize." And in closing they say: "Are the Vermonters as big fools as the Survey seems to think they are?"

We medical students believe that we shall soon see our medical college properly endowed, and a state hospital in Burlington to which the poor can be sent for free treatment, from all parts of the state and where adequate clinical facilities will be offered to us as students of the University of Vermont College of Medicine, and thereby our rating will be A+ instead of A.

GEORGE L. STEELE,

President Class of 1914, University of Vermont College of Medicine.

75 Grant St., Burlington, Vt.

NEWS ITEMS.

In eight towns all within a few miles of Montreal, seventy-seven cases of typhoid fever exist, according to reports issued by Dr. Elzear Pelletier of the Quebec Board of Health.

The State Board of Health of Illinois began January 4th the free distribution of vaccine for the prevention of typhoid fever. The Victoria (B. C.) Board of Health, Canada, will commence the issuing of quarterly bulletins. They will be distributed to each household throughout the city.

German measles which last year afflicted more than ten thousand children in Philadelphia is again epidemic. During April there were 1,791 cases reported to the Bureau of Health. The Department of Health will make vigorous efforts to check the spread of the disease by requiring a strict quarantine as the law provides.

Freshmen at Harvard University hereafter will be under the supervision of a physician, will undergo periodical physical examinations, and will receive advice as to the best means of retaining their physical vigor.

In compliance with a request from the mayor's bureau of licenses of New York City, all applicants for licenses to peddle from push carts will be examined at the tuberculosis clinics of the Department of Health. No applicant whose sputum contains tubercle bacilli will be recommended for a license. Tuberculous persons who

are no menace to others and who need outdoor employment will be given the preference in issuing the licenses.

Dr. C. E. Chandler of Montpelier, chief surgeon of the Heaton Hospital and one of the leading physicians of the state is ill with a slight shock which has affected one side.

American Proctologic Society will hold its sixteenth annual meeting at Atlantic City, N. J., June 22 and 23, 1914. The profession is cordially invited to attend all meetings.

The Chicago Medical Society will hold its Third Annual Meeting of Alienists and Neurologists of the United States, for the discussion of mental diseases in their various phases, July 14th to 18th, 1914.

It is the object of the Society:—

First:—To have a scientific program. The titles of papers already received for this meeting, indicate such a program, including research work, that will be beneficial to every physician, whether connected with an asylum, sanitarium, or in general practice.

Second:—One that will be educational to the public as well, therefore, one day is to be devoted to the discussion of the prevention of insanity and the conditions causing mental defectives, to which the public will be invited.

Committees have been appointed to report on the causative factors, in acquired insanity and inherited mental defectives, from alcoholism, epilepsy, infectious diseases, especially syphilis, and the effect of environment upon mental defectives, in their relation to criminology.

Resolutions will be introduced and discussed, for the framing of such laws, that will, in a reasonable measure, prevent these conditions, and such resolutions will be presented to the various State Legislatures, and the National Government for their consideration.

Third:—A committee will report on what constitutes a modern hospital or asylum, and what the duties of the State to the physician who makes the care of the insane and mental defectives a specialty.

Arrangements have been made with the Post-Graduate Schools of Chicago, to give a complimentary course in all lines of work for the remaining days of July. This course will embrace internal medicine, surgery, and special regional surgery, cystoscopy, X-ray, brain pathology, vaccine making, and Wassermann reaction, etc. The superintendents and attending physicians are invited to avail themselves of this opportunity for the complimentary course. Tickets for admission to this course can be obtained from the Secretary during the meeting. All communications should be addressed to Dr. W. T. Meford, 2159 West Madison Street.

Yours respectfully,

Chairman.

Sec'y.

The 39th annual meeting of the American Academy of Medicine will be held in Atlantic City on June 19 to 22, 1914, with the following program:—

FRIDAY, JUNE 19th.

10:00 a. m. Committee Room B. First meeting of the Council.

2:00 Sun Parlor. Executive session of the Academy.

1.—Call to order by the retiring president, Dr. Ray Lyman Wilbur, San Francisco.

2.—Introduction of the president-elect, Dr. John L. Heffron, Syracuse, N. Y.

3.—Report of the Committee on Local Arrangements. Dr. Walt P. Conaway, Atlantic City, chairman.

4.—Report of the Program Committee. Dr. Alex R. Craig, Chicago, chairman.

5.—Reading of the minutes of the last annual meeting.

6.—Report of the Council.

7.—Election to membership.

8. Appointment of a Committee on Nominations.

9.—Report of Treasurer.

10.—Action on the proposed amendments to the Charter.

11.—New Business.

3:00 p. m. (Approximately) or at the close of the executive session.

Open Session.

1.—Report of the Delegate to the Seventh Annual Convention of the Illuminating Engineer-

ing Society, Dr. Ernest B. Heckel, Pittsburgh.

2.—Report of the Delegates to the Fifth Annual Meeting of the American Institute of Criminal Law and Criminology; (a) Dr. Donly C. Hawley, Burlington Vt.; (b) Dr. Edith R. Spaulding, South Framingham, Mass.

3.—Report of the Delegate to the 1914 conferences on Medical Education, Dr. John L. Heffron, Syracuse, N. Y.

4.—“Rigidity of Curriculum, an Obstacle to the Progress of Medical Education,” Dr. Charles McIntire, Easton, Pa.

Discussion.

8:00 p. m.—Annual Address, Dr. John L. Heffron, President of the Academy, Syracuse.

SATURDAY, JUNE 20th.

10:00 a. m.—Executive Session. (This will be for the transaction of urgent business only and will be brief).

Open Session.

Topic for Discussion: “*The Practice of Medicine and the Industries.*”

A. Menace to Health.

Due to

I. Nature of Occupation. (a) Occupations Hazardous *per se*. “Cancer in its Relation to Industries and Occupation,” Frederick L. Hoffman, LL. D., Statistician, Prudential Insurance Company, Newark, N. J. (b) Occupation Toxemias. “Menace to Health due to Occupation Toxemias,” Alice Hamilton, A. M., M. D., Investigator, Illinois Commission on Occupational Diseases, Chicago. (c) Machinery Hazard. “Hazards Incident to the Use of Machinery,” William M. Ogle, Ph. B., M. D., Surgeon to the Colorado Fuel and Iron Company, Trinidad, Colo. (d) Monotonous Forms of Specialized Labor. Paper by Caroline Hedger, M. D., United Charities, Chicago.

II. Operatives’ Physical Condition. (a) Child Labor. Paper by Owen Lovejoy, A. M., General Secretary, National Child Labor Committee, New York. (b) Women Operators. Paper by S. Adolphus Knopf, M. D., New York.

III. The Parturient Woman. “Parturient Woman,” E. E. Montgomery, M. D., LL. D., Prof. of Gynecology, Jefferson Medical College, Philadelphia. (c) Miscellaneous.

IV. Fatigue. Paper by L. Duncan Bulkley, A. M., M. D., New York.

V. Physical Environment. (a) Light. “Light in the Industries,” Edward Jackson, A. M., M.

D., Prof. of Ophthalmology, Univ. of Colorado, Denver. (b) Heat and Ventilation. (c) Crowding. Paper by Charles Richmond Henderson, D. D., Ph. D., Prof. of Sociology, Univ. of Chicago, Chicago. (d) Noise. (e) Foods and Drugs. Paper by Winfield Scott Hall, Ph. D., M. D., Prof. of Physiology, Medical Department, Northwestern Univ., Chicago. (f) Home Surroundings. (g) Improper Recreations. Paper by Sherman C. Kingsley, Director Elizabeth McCormick Memorial Fund, Chicago.

B. Remedial and Preventive Measures.

VI. Medical Inspection. (a) National, State, Municipal or Private—Which or How Co-ordinated? Paper by Ray Lyman Wilbur, A. M., M. D., Executive Head Medical Department, Leland Stanford Univ., San Francisco. (b) Of Operatives. (c) Of Plant.

VII. Medical Advice. (a) Construction of Plant. (b) Rules and Regulations in Operating Plant—Carelessness. Paper by John B. Lowman, M. D., Surgeon to the Cambria Steel Works, Johnstown, Pa. (c) Legislation. Paper by J. E. Tuckerman, A. B., M. D., Cleveland. (d) Homes. “Healthy Homes for the Working Classes,” Guy S. Kiefer, A. B., M. D., Health Officer, City of Detroit, President, Michigan State Medical Society, Detroit. (e) Social Environment. Paper by Woods Hutchinson. A. M., M. D., New York.

VIII. Medical Treatment. (a) Injuries. Paper by William L. Estes, A. M., M. D., Surgeon in Charge St. Luke’s Hospital, South Bethlehem, Pa. (b) Sickness. Paper by Randolph Hudston, M. D., Denver.

4:00 p. m. The Fifth Annual Conference on *Western Medicine in Eastern Lands*. The trials of the Occidental physician and the triumphs of Occidental medicine will be portrayed in a series of addresses from the following workers on the field:

Bishop W. R. Lammuth (M. D., Bellevue, 1881), if he returns from an official visit to the Congo in time; Dr. W. H. Jeffries, of China; Dr. R. T. Shields, of East India Medical College, Univ. of Nanking; Dr. L. C. Bulkley, of Siam, and probably Dr. Edith Brown, of Lodiana, India.

MONDAY, JUNE 22.

11:00 a. m. Committee Room B. Final Executive Session.

1. Unfinished Business.

2. Report of Council submitting recommendations of the Committee on Policy.
3. Report of Committee on Transportation, Dr. J. E. Tuckerman, Cleveland, chairman.
4. Reports of special committees.
5. Report of Nominating Committee.
6. New Business.
7. Adjournment to a time in Pennsylvania to elect officers.

A tour through Scotland and England has been organized by Dr. Melville of St. Albans. The trip is arranged to include attendance at the meeting of the American College of Surgeons in London, July 26-31.

The tour will be carried out under the direction of Thos. Cook & Son, and will be accompanied by the organizer, Dr. E. J. Melville of St. Albans, Vermont, from either of whom full information regarding the tour may be obtained.

The following is quoted from the *Journal of the American Medical Association*, March 14th, page 861:

The newspapers having reported a number of deaths in Los Angeles from neosalvarsan, we telegraphed our correspondent in that city asking for full particulars. He replied that seven deaths had occurred in the hospitals within two days following injection and that another patient was likely to die; that two theories had been advanced regarding the cause of these deaths: (1) That the ampule which was used and which was covered by paper may have been cracked and this crack being covered by paper not observed, so that the neosalvarsan was open to oxidation and thus became changed; (2) that the syringe may have been defective and this gave rise to changes in the solution; that the remaining ampules of neo salvarsan have been analyzed and are stated to be in good condition. An autopsy report of one of the cases was made by Dr. Stanley P. Black which showed a somewhat congested spinal cord with marked distention of the blood-vessels and softening of the posterior columns. "Anatomic diagnosis: syphilis of the lung and liver, beginning pneumonia of the right and left lung, pyckonephrosis of the right kidney, irrita-

tion, possibly inflammation of the posterior columns of the spinal cord. From the autopsy findings and the clinical history it was concluded that the cause of death was an irritation of the spinal cord as the result of the injection of neosalvarsan intraspinally." The statement of Dr. A. T. Charlton, who treated the patients is as follows:—"I first drew off a small quantity of blood from each patient and then removed the clot, leaving a serum with which I mixed a salted solution and the two tubes of neosalvarsan. I then heated mildly and placed in hermetically sealed tubes and placed on ice for twenty-four hours. After another twenty-four hours, it was administered in graduated syringe, some of the patients receiving a greater dosage than others. Harry Lane, the surviving patient received the first and the largest amount of the injection. All injections were intraspinally."

OBITUARY.

Dr. Henry H. Lee of Wells River, Vermont, a graduate of the University of Vermont College of Medicine, Burlington, in 1881, a surgeon in the United States Army during the Spanish-American War, attending surgeon to the Cottage Hospital, Woodsville, N. H., and a member of the Vermont Tuberculosis Commission, the American Medical Association, and the Vermont State and Caledonia County Medical Societies, died at his home after a long illness, on April 4th, aged 56 years.

Hiram E. Johnson, M. D., Castleton, Vermont, Medical College, 1857; founder of Weston, Ill.; died at his home in Fairbury, Ill., April 6th, aged 79 years.

Philip Mansfield Fitzsimmons, M. D., University of Vermont, Burlington, 1892; a member of the Massachusetts Medical Society, formerly medical inspector of schools, library trustee and a member of the school board of Cambridge, Mass., died at his home in that city April 4th, aged 56 years.

The career of the Rev. Ohan Gaidzakain, M. D., a brief notice of whose death at Harmon-on-the-Hudson was printed in the April issue of the *Journal* is so full of human and tragic

interest that we are printing a sketch partly prepared by Dr. Geo. H. Godson, at whose sanitarium Dr. Gaidzakain died. Dr. Ohan Gaidzakain was born in Celbastan. He was early converted to the Christian religion and was one of the eight members of the first Evangelical Armenian Church. He graduated from the Theological Seminary at Marash in 1869, the following fourteen years he spent as a native missionary. Realizing the great demand for medical missionaries, he came to America and entered the College of Medicine of the University of Vermont from which institution he graduated in 1883. After his graduation, Dr. Gaidzakain returned to his native land where he practiced among the Armenian peasants until he was forced to flee during the Turkish massacres, in 1895, and only escaped with the greatest difficulty, abandoning home and property. He arrived in America at the age of 61, penniless and with health broken.

During his service Dr. Gaidzakain had held many enviable positions in the Vilayet of Adana. For about fifteen years he was the representative of protestant church in Vali's Cabinet of Ministers of all denominations. He was respected as the lover of and the fighter for justice to the poor. His Christian influence even among the Turkish officials had won high esteem and due respect as minister of the Gospel and lover of truth. During the forty days of fasting of Mohammedans at their Ramazan, he was often summoned to the Vali's private parlor at all hours of night for conversing on various religious and scientific subjects. His fearless views had won the admiration of the Vali and many high Turkish officials as well as that of well known Armenians of all denominations.

He served as head officer of Board of Health at different times. He was teacher in chemistry at the Government School for Mohammedans. Served as quarantine physician at various ports for army of soldiers. Also served in various confidential positions for the government who well knew his love of being an ardent Christian worker also.

In 1895, just as the country was beginning to feel a sense of general distress among Mohammedans and Christians, a Turk butcher shook his butcher's knife at him saying he wished to have an opportunity to try that knife on him.

During the massacre, in spite of many Mohammedan friends promising to save him, he had good reasons to escape to safety with his large family of whom some were wounded, and goods were plundered.

He came to America depending largely on one son who had just graduated in medicine, but was not able to take care of the large family who came with him.

He ever mourned his lost opportunities of usefulness in his home country. He wrote the "Illustrated Armenian" in English; also "Care of Health," in Armenian language, in the meantime continued his Christian work among his countrymen in America.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

ADENOMYOMA OF THE VAGINAL RECTAL SYSTEM.

T. S. CULLEN, Baltimore (*Journal A. M. A.*, March 14), reports two cases of adenomyoma of the recto-vaginal septum of his own observation and also reproduces the accounts of two somewhat similar cases described at the meeting of the Royal Society of Medicine, Jan. 2, 1913, together with some of the remarks of the discussion following. His own cases are reported in detail, with microscopic examination. The cases are naturally of considerable surgical interest; they are not histologically malignant and do not give rise to metastases. In the early stages, as shown in one of his cases, the growth can be removed without injury to the rectum but when the rectal involvement is extensive, resection will as a rule be needed. The immediate differential diagnosis between the adenomyomas and cancer of the bowel is of the utmost importance. If the uterus contains myomas the probability of an adenomyoma is strengthened. If the growth appears to be muscular, it is still more probable and if it is cystic, it is almost certain. There is no rectal hemorrhage and the only symptom is pain on defecation. The removal must be complete as portions left will continue to grow and cause complications. The operation for cancer must necessarily be more extensive. The cases reported emphasize the necessity of careful microscopic control of all rectal growths as they might easily be mistaken for carcinomas. He gives directions as to operating, especially the careful isolation of the ureters and the removal of the uterus altogether as in the Wertheim operation. It would be wise, he says, to place a delicate protective drain but to keep it away from the suture line in the bowel. If a large part of the lumen of the bowel is involved, its resection will be necessary. Cullen believes that with careful examination of all rectal or perirectal growths, many similar cases to those reported will be found. The article is illustrated.

DANGERS OF KIDNEY INJECTIONS.

Pyelography by use of collargol injections and the roentgenogram has come into favor to a considerable extent in this country chiefly through the writings of Braasch and the reports of the Mayo clinic in none of which, says J. M. MASON, Birmingham, Ala. (*Journal A. M. A.*, March 14), has he found reference to any injurious effects with the use of this method. He reports two cases of his own observation in one of which the patient suffered intensely from pain, nausea and vomiting and had a slight rise of temperature for four days. When the kidney was removed five days later its surface showed numerous nodules with black discoloration beneath the capsule. On section each nodule proved to be the outer surface of an infarcted area, deeply stained with collargol and the different infarcted areas showed different degrees of inflammation. No collargol remained in the kidney pelvis. A few days later a patient with renal tumor—a hypernephroma—was injected with collargol, care being taken to use a smaller quantity and to stop at the first appearance of pain and leave the catheter in the ureter until it was thought the collargol had all drained away. No special constitutional effects were noted but on removing the tumor ten days later, there were found a few of the discolored nodules on its surface and the same black infarcts on section. The kidney contained a quantity of precipitated collargol. The microscopic examination by Dr. E. M. Mason showed wide-spread collargol deposit in the kidney substance, collargol stained deposits and granular casts throughout the tubules and many of the malpighian corpuscles showed collargol masses within the capsule of Bowman. No definite evidence of inflammatory reaction was seen in the collargol-containing tubules outside the necrotic areas but in some areas tube-casts both stained and unstained are more numerous than one would expect as a result of the primary condition. Mason also gives a description of the microscopic appearance of a kidney showing similar conditions from the laboratory of Dr. Mallory of Boston, who attributed them to pushing the catheter too far and entering a calix into which the fluid was injected under pressure. Mallory mentions having seen one other case of damage to the kidney from collargol injection. Mason reviews the literature and comparing the findings says that we are able to show by the pathologic conditions that a definite sequence of events follows injection of the renal pelvis, if the intra-pelvic pressure is raised beyond a certain unknown point. The pelvis is overfilled and the injected material, together with any infectious matter in the pelvis passes up into the convoluted tubules and glomerated capsules, and may be followed by rupture of the tubules and production of infarcts or abscesses. Whether or not the collargol has any irritating or cauterizing action in the process is in dispute. Mason gives a summary of the experimental work of Voelcker, Oehlecker, and of Strassmann and in endeavoring to account for the difference between the pathologic observations of the latter and those of others, he thinks it may be due to the lesser pressure employed. The cases he presents, he says, show that damage may result from conditions not entirely under our control in the injection of the kidney and that such are contra-indicated in the presence of infection and where the integrity of the kidney has been impaired by injury or disease. The article is illustrated.

RADIUM IN BLASTOMYCOSIS.

A case of blastomycosis, clinically and microscopically diagnosed, in which the radium treatment was used with brilliant success is reported by F. E. SIMPSON, Chicago (*Journal A. M. A.*, March 14). The lesion, which was of three months' duration, involved both lids of the left eye. A radium varnish applicator, one-quarter strength, containing 0.04 gm. of radium barium salt, was applied for a total of three hours in fractional doses during the course of three weeks and caused the painless disappearance of the lesion. Two minute points appeared after a few weeks but disappeared after fifteen minutes' exposure to the radium. The healing was accomplished with no tendency to ectropion and the scar of the lesion is almost invisible.

MENTAL HEALING.

J. V. HABERMAN, New York (*Journal A. M. A.*, March 14), protests against the neglect by the medical profession and medical instructors in regard to the influence of the mind on the body. It has taken the physician too long to recognize the fact that the public mind is very open to anything bearing on this subject, hence the religious cults and the vast amount of literature in the public press and otherwise. Those who are attracted to these ideas run in number up to vast thousands and are active proselyters of others. The physician has kept his eyes too closely on the disease, its physical and laboratory study, but it does not always respond to treatment and there are hosts of conditions which become protracted as attention is called to them. We have too much forgotten that we are dealing with individuals and have considered the mind so impalpable that it could be left to the metaphysician and the quack.

CANCER OF THE PANCREAS.

Captain J. BOURKE, Medical Corps, U. S. A., Fort Crockett, Tex. (*Journal A. M. A.*, March 14), reports a case of primary carcinoma of the pancreas in a soldier aged 22, as being of interest both on account of the age of the patient and as illustrating the difficulty of diagnosis of malignant growths of the pancreas from simple pancreatitis. The importance of this fact has already been emphasized by Moynihan and in fact an exploratory incision will not always clear up the case. Bourke quotes from Moynihan when speaking of pancreatitis as follows: "Its mimicry of carcinoma may be complete. Painlessly and progressively the patient may develop jaundice which continues to deepen until the 'black jaundice' of the older writers can be recognized. There is great loss of weight, and prostration, hebetude and misery, though often the appetite is unimpaired. The liver enlarges and the gall-bladder distends to a degree which allows it to be seen and felt protruding below the rib margin. In accordance with the law of Courvoisier we assume that such dilatation of the gall-bladder is due to causes other than stone. An examination of the stools might show complete absence of the bile pigment, and this may seem the most conclusive evidence of carcinoma, for

a chronic inflammation, however invertebrate, rarely causes an impenetrable block to the passage of bile." In the case reported the patient was operated on twice with only temporary relief from the first operation. In the first operation the gall-bladder was opened and drainage established but with only slight relief. In the second operation the gall-bladder was anastomosed to the jejunum and a diagnosis of the malignancy was obtained. The whole duration of the symptoms was not more than four months. It is worthy of remark that sugar was not found in the urine at any time. A full report of the microscopic examination confirming the malignancy of carcinoma is included in the report.

PERIMYOSITIS CREPITANS.

A case of perimyositis crepitans is reported by A. E. HOAG and MAX SOLETSKY, New York (*Journal A. M. A.*, March 14), who review the three previously reported cases. The patient was a medical student, who had done a great deal of concert piano-playing which caused him a great deal of mental as well as physical strain. For six months he had noticed a crepitation of the muscles in the upper back along the left side, and also in the neighborhood of certain joints. The pain was felt only on exertion. Roentgenoscopy revealed no calcification or anomalies in the joints. Crepitation was felt by placing the hand over the scapular muscles and having the patient put them on the stretch. This was also felt over the vertebral muscles and the ankle and wrist joints. An examination of muscle sample showed localized thickening in the aponeurosis and muscle caused by the hyaline swellings. The case seems to be the only one in which microscopic and pathologic examinations were made. Hoag and Soletsky conclude as follows "The cause of this lesion is over-exertion resulting in small areas of rupture in the muscle and the aponeurosis, which are followed by minute hemorrhages and then hyaline thickenings. These thickenings cause a creaking when the two surfaces rub together. If there is any fibrin present it is absorbed very early."

OPHTHALMOPLAGIC MIGRAINE.

AARON BRAV, Philadelphia (*Journal A. M. A.*, March 14), reports a case of ophthalmoplegic migraine which occurred only following parturition, appearing after each child-birth within a period of five years and subsiding within a few weeks. It was peculiar also in that the external rectus of the right side was the muscle chiefly involved instead of the usual ocular motor paralysis and the case was peculiar also in the occurrence of multiple recurrent sties. The conditions point to a toxemia as the exciting cause. Brav has found no other similar case in the ophthalmic literature.

HYPERACIDITY.

The changes of opinions that have occurred and the changes in the methods of treatment in so-called hyperacidity of the stomach are noticed by

ADOLF SCHMIDT, Halle, Germany (*Journal A. M. A.*, February 7), who reviews the theories and etiology of the conditions. Practically the term is taken to mean cases of increasing gastric disturbance, appearing at various intervals after meals, or the ingestion of special kinds of food; heartburn is a common accompaniment. Tests with the stomach-tube reveal either hyperacidity or hypersecretion, and the latter may be separated into a digestive and continuous type. The latter, when appearing periodically, is known as Reichmann's disease or gastrosuccorhea. Pawlow's opinion, that pure gastric juice has the same percentage of hydrochloric acid, must in the light of recent research be abandoned unless we assume that the superficial epithelium produces concentrated alkaline fluid, together with pure gastric juice, which is paradoxical according to Gregerson. Schmidt concludes that the stomach secretion must vary under pathologic conditions. Nervous influences come into play here and the question arises whether or not there is an etiologic relationship between the hyperacidity of the stomach and the subjective symptoms. The anamnesis must not be depended on without the use of the stomach-tube. Still more important is the question whether this hyperacidity occurs as a disease dependent only on nervous causes, or whether it always has some organic lesion as a cause. The old notion that it was a pure gastric neurosis has changed on account of the rediscovery of duodenal ulcers, and he attaches weight to the Mayo brothers' opinion in this regard. We have reason to suspect such an ulcer if roentgenoscopy reveals the peristalsis, at first increased, stops in the later period of digestion, that the well-known six hours' residue remains, and the two periods are separated by a spasmodic contraction of the pylorus corresponding to the setting in of the hunger pains. Hence the importance of careful examination by all available means, and other causes must also be sought. The purely nervous cases are less to the fore, but we would be premature in entirely denying hyperacidity in some cases as a unit *per se*. In treatment the principal point is, not to confine ourselves entirely to the stomach alone, but also to calm and strengthen the nervous system. Some patients are best treated by being sent at once to a hospital or sanatorium, and Schmidt demands this in every severe case. Naturally, we try first to reduce the secretion. Atropin acts this way, but its continuous use is not advisable, nor is that of the alkalines, which may irritate the stomach glands. Schmidt favors the use of the magnesium oxid, combined with a small amount of belladonna and a purgative, such as sodium sulphate. Silver nitrate owes its excellent effect on hyperacidity to its astringent effect on the circulatory cells and partly to its blunting the hyperirritability of the mucosa. For the latter purpose it should be given half an hour before meals; for the former, a solution to rinse the stomach in the morning by the tube. Diet is perhaps more important, and foods that act as secretory stimulants, like spices, coffee, strong alcoholics, etc., should be avoided. As to special diets, it is difficult to keep them up for any length of time, and Schmidt has long returned to a mixed diet and strict observance of the following rules: All food must be thoroughly cooked and carefully minced. The stomach must come to rest at least once during the twenty-four hours and the times of the meals changed to secure this. Drinking should be generally diminished and restricted to times when the stomach is not filled

with food, especially in cases of ptosis. If the condition is severe or combined with ptosis, he makes the patient stay in bed for two weeks, and this he considers important. Sometimes hot compresses are used to bring relief—twice daily for two hours. At night they are replaced by cold hydropathic compresses. Washing the stomach is indicated only when the hyperacidity is based on catarrh. All these directions are given in more detail with the reasons for their use. As regards operation, the necessity varies according to the case. He would advise an operation in a young man in active business who wishes at all costs to get rid of his pains, rather than in one who is not so pressed and can stand his troubles and regulate his diet. The manner and extent of the operation must be determined by the findings, such as ulcer, gall-stones, adhesions, etc. If there are no anatomic lesions at all found, he would advise gastro-enterostomy without closing the pylorus and the dietetic and other treatment continued. In no case should the patient be permitted to get up and eat anything he wants too soon after an operation.

HYPERACIDITY.

C. H. NIELSON. St. Louis (*Journal A. M. A.*, February 7), considers hyperacidity a symptom of disease rather than a disease itself. It frequently occurs in the sedentary and overworked and in connection with other abdominal disorders, such as appendicitis, gall-stones, enteroptosis, uterine displacements, etc. It is also an early sign of the beginning of hyperthyroidism and of tuberculosis, and it may be due to ear troubles or eye-strain. It is a complex affair to deal with, and hence calls for a correct diagnosis of the causal conditions, with the removal of which the hyperacidity often disappears. In addition to these general or exciting causes, the local conditions in the stomach must be considered. Any one who has had hyperacidity for any length of time will have certain pathologic changes in the gastric mucosa, hypersecretion and hyperesthesia, and we often find pylorospasm, hypermotility or gastropnoia. He divides hyperacidities as follows: "1. Chemical hyperacidity with a normal quantity of gastric content after a Boas-Ewald test breakfast. 2. Chemical acidity combined with hypersecretion or with a continued secretion. Here the quantity of gastric content is abnormally and constantly large. 3. Chemical hyperacidity combined with hypersecretion and hyperesthesia. 4. Clinical or symptom hyperacidity with hyperesthesia. In this class of cases we have all the subjective symptoms of a chemical hyperacidity. In these cases we find a normal total acidity or even a subacidity. The symptoms are due to the hyperesthetic condition of the gastric mucosa, which is painful in a normal or even subnormal acid content. 5. In this class we may find any one or a combination of the foregoing, together with pylorospasm, hypermotility, or peristaltic unrest." The treatment resolves itself into the removal of the general causes and local conditions, and diet is of the first importance. It is the free acid which causes the pain and discomfort, and foods that will combine with it should be included, such as those rich in proteins. The patients that have a straight hyperacidity do well on a high protein diet. If we consider the acid-binding power as the essential factor,

we must give foods stimulating to the gastric mucosa. If we wish a diet with less combining power and less stimulating, we shall give such foods as carbohydrates, full milk and cream, vegetables, etc. The diets are the same as the so-called ulcer diets, and Nielson considers the Leube diet as the one for general use. It is in some respects a combination of the two diets mentioned above. Another point he makes is that frequent feedings give better results than large feedings at longer intervals. Each case in a measure is a law to itself and must be studied accordingly. The salt-free diet recommended by Richarts is, according to his experience with a few patients, of value. The medicinal treatment is sometimes simple and sometimes difficult. In straight cases of hyperacidity the simple antacid treatment will often work wonders. Of late he has used bismuth subcarbonate with magnesium sulphate in place of sodium bicarbonate, which, acted on by the acid, produces sodium chlorid, which is not desirable. When there is hypersecretion or hyperesthesia, we must use the antacid treatment, but also employ oils, etc., demulcents, and the use of atropin, belladonna or bromids is recommended for their effect on the gastric mucosa. Special attention is given by Nielson to the use of peroxid of hydrogen as recommended by Petrie, and he has tested it to determine the value of large and small doses, its permanent effect and any injurious action that it may exert on the mucous membrane. On account of the large amount required to be effective, its temporary effect and the possibility of harm from long-continued use, he has discarded it in the treatment of these conditions. Physical therapy, gastric lavage and graded systematic exercise under medical direction are also mentioned in the treatment of hyperacidity.

AMERICAN MEDICAL EDITORS' ASSOCIATION.

On June 22nd, at 9 a. m., the above mentioned association will meet at the Marlborough-Blenheim Hotel, Atlantic City, N. J., under the presidency of Dr. E. A. Vander Veer of Albany, N. Y. An unusually attractive programme is being prepared. Among the papers are the following:

President's Address.—E. A. Vander Veer, M. D., Albany, N. Y.

"Relation of the Medical Press to the Cancer Problem," by Mr. Fred'k L. Hoffman, statistician of the Prudential Insurance Co., Newark, N. J. (by invitation).

"The Things That Count in Medical Practice," by H. Edwin Lewis, M. D., New York.

"Ideal National Medical Journal: What It Should Be and What It Should Not Be," by W. J. Robinson, M. D., New York.

"Two Problems of the Organization Journal: The Mediocre Paper and the Editorial Depart-

ment," by Sarah M. Hobson, M. D., Chicago, Ill.

"Medical Journalism as a Local and as a National Proposition," by Thomas S. Blair, M. D., Harrisburg, Pa.

"Medical Books and Journals," by T. D. Crothers, M. D., Hartford, Conn.

"The Medical Periodical and the Scientific Society," by F. H. Garrison, M. D., Washington, D. C.

"Editorial Experiences," by A. L. Benedict, M. D., Buffalo, N. Y.

"The Special Medical Journal," by A. Bassler, M. D., New York.

"The Medical Profession and Its Influence from a Buying Standpoint," by Joseph MacDonald, Jr., M. D., New York.

"The Preparation of the Original Article and the Editors' Latitude," by E. Franklin Smith, M. D., New York.

"He Among You Who Is Without Sin Shall Cast the First Stone," by Erwin Reissmann, M. D., Newark.

In treating insomnia try monobromated camphor, 1 grain; extract valerian root, 1 grain; veronal, 4 grains. Follow with a warm drink.

People with *fair* hair should not use hair tonics containing any of the following: resorein, beta-naphthol, empyroform, oil of cade, ichthyol and tannic acid.

Hughes suggests, in the treatment of writer's cramp, a formula calling for 30 pills and composed of zinei phosphidi, 2 grains; ext. nucis vomicae, 10 grains; ferri albuminatis, 30 grains. —*Medical Council.*

DENTAL INTERNE (MALE).

June 3, 1914.

The United States Civil Service Commission announces an open competitive examination for dental interne, for men only, on June 3, 1914. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position, at \$600 per annum, with maintenance, in the Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in positions requiring similar

qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The department states that it reserves the right to terminate the appointment at the expiration of one year of service if it is deemed advisable to do so.

In addition to many interesting cases presented, the dental interne is given an excellent opportunity for study and for doing experimental and research work in the pathological, histological, and other laboratories of the institution.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. Letter writing (the subject matter on a topic relative to the practice of dentistry) . .	5
2. Anatomy and physiology (general questions on these branches, also with special reference to the teeth, mouth, and head)	10
3. Chemistry, materia medica, and therapeutics (the preparation, properties, and reactions of chemicals, crude drugs and their preparations, their action and application, with those of other therapeutic agencies) .	15
4. Dental pathology and oral surgery (the morbid processes incident to diseases and injuries of the teeth, mouth, and contingent structures, and their surgical treatment)	20
5. Operative and prosthetic dentistry (the detailed technics of general and special operative and laboratory work) .	25
6. Bacteriology, histology, and hygiene (the cultivation, isolation, demonstration of bacteria, the principles of sterilization, mounting specimens, use of microscope, the principles of general and oral hygiene, etc.)	10

7. Orthodontia (local and constitutional irregularities in growth and development of the teeth and their correction) 15

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Total 100

Applicants are required to be graduates or senior students of regularly incorporated dental colleges, and applications will not be accepted from persons who have been graduates for more than two years. The names of senior students will not be certified for appointment until they have furnished proof of actual graduation.

Statements as to training and experience are accepted subject to verification.

Applicants must be unmarried.

Age, 20 years or over on the date of the examination.

No sample questions of this examination will be furnished.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Form 1312 to the United States Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. In applying for this examination the exact title given at the head of this announcement should be used.

Issued April 30, 1914.

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TECHNICAL ASSISTANT IN PHARMACOLOGY
(MALE.)

June 1, 1914.

The United States Civil Service Commission announces an open competitive examination for technical assistant in pharmacology, for men only. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Division

of Pharmacology, Hygienic Laboratory, Public-Health Service, at salaries ranging from \$1,800 to \$2,000 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will consist of research work in pharmacology, including original investigations in physiological assay of drugs and of the action of drugs by means of the electrocardiograph.

Applicants should have a reading knowledge of French and German.

Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. General education and scientific training	40
2. Experience and fitness	40
Publications	20
—	
Total	100

An educational training, including a degree of Doctor of Medicine from an institution of recognized standing, and at least two years' subsequent experience in experimental pharmacology or physiology, such experience to have included the study, by means of experimental methods, of the action of drugs, are prerequisites for consideration for this position.

Statements as to training, experience, and fitness, are accepted subject to verification.

Applicants must have reached their twenty-fifth but not their fortieth birthday on the date of the examination.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Form 304 and special form to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Post Office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal., Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse,

St. Louis, Mo.; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on June 1, 1914. In applying for this examination the exact title as given at the head of this announcement should be used.
 Issued April 24, 1914.

The American Society for Physicians' Study Travels will make its first tour immediately after the close of the next meeting of the American Medical Association, starting from Atlantic City June 26th. The complete itinerary can be obtained upon application to the Secretary, Dr. Albert Bernheim, 1225 Spruce Street, Philadelphia, and it will be found to promise an interesting, pleasant, and profitable outing to all participants. The objects of the newly-formed organization are in the main to afford an opportunity to make the best use of one's vacation, time and money, in seeing cities and health resorts, and gaining practical knowledge of their institutions—medical, historical, and municipal—as well as to attend clinics, demonstrations, lectures, illustrated with lantern slides, and public addresses. Information can be obtained by addressing the secretary, Alfred Stengel, 1225 Spruce Street, Philadelphia, Pa.

SUPPLICANT FOR EUTHANASIA RECOVERS.

From time to time magazines and newspapers narrate the case of some unfortunate victim of disease or injury whose recovery is apparently out of the question and who is doomed to weeks or months of suffering while awaiting the slow progress of the disease and the seemingly inevitable outcome. Either the sufferer or some sympathetic friend, affected beyond endurance by the spectacle of prolonged and useless agony, appeals to the medical profession and to public opinion for a speedy and painless death. These cases are often discussed editorially in the newspapers and the question raised whether physicians should not

be given the right and power to terminate an apparently hopeless illness and thus spare the victim a long period of pain, and the friends and relatives needless anguish through the witnessing of unavoidable suffering. The circumstances attending some of these incidents would at times almost seem to justify extreme measures to terminate a scene of helpless misery, yet the medical profession has never desired and will never accept the responsibility of acting in such cases as judge, jury and executioner. Entirely aside from the moral and sentimental objections which could be raised, physicians, better than any other class, know that apparently hopeless cases sometimes terminate in recovery and that the predictions of the most skilled and competent physicians are sometimes not fulfilled. The responsibility of deciding whether a given case is one which justifies the use of extreme measures to shorten the period of suffering would be too great for any one person to assume; neither would it be safe for society to permit such responsibility to be lodged in the hands of any profession or class. A recent newspaper dispatch strikingly illustrates the dangers of such a plan. According to a report, several years ago a clergyman's wife, suffering from a severe and apparently hopeless malady, begged in a letter published throughout the country for "scientific kindness" on the part of her attending physicians, which would terminate her sufferings and give her a painless death. She received many replies endorsing her argument that physicians should be permitted to put her and other similarly unfortunate patients out of their misery. Apparently, however, the lady is today very glad that her pleas did not prevail, as *The Journal of the American Medical Association* states that she is reported to have been completely restored to health by a surgical operation, and to be perfectly well.

THE EXPENSIVE SANDWICH.

The wide-spread interest in scientific circles as well as in the ranks of social workers concerning some of the problems of nutrition among the masses is exemplified by current discussions regarding school lunches, institutional dietaries, economical menus for the household and the cost of living. These are constantly bringing out the

fact that diet customs are subject to wide inequalities in character in different parts of the world and in different strata of society; and they further make it clear that food habits are not so fixed as was once supposed, but are varied to meet the economic changes and alterations incident to the shifting of population. The changes in the nutrition of the masses lie in the cities, the country districts adhering more closely to the dictates of tradition. It is in the cities that the most noticeable of the modern changes in dietary customs, such as the increasing consumption of meat and the introduction of ready-to-eat foods, have first taken hold on greater numbers of individuals. Furthermore, the questions of diet in large institutions almost always need to be solved with reference to local market conditions.

Max Rubner, the eminent physiologist and hygienist of Berlin, has lately presented some interesting data on one of the many transformations in dietary custom which is peculiarly conspicuous in the cities of Germany. He says that the American sandwich is rapidly becoming popular in Germany. Anyone who observes carefully the eating habits of working men in this country and who has followed the enormous increase in the lunch-counter scheme of dietetics among our own population must admit that the sandwich is something more than an accident. Physiologically, it involves the supplementing of bread—the common “staff of life”—with considerable butter and meat. The sandwich represents a step in the evolution of bread-and-butter combinations. Rubner believes that the growing use of the meat-laden sandwich is attributable, in Germany to the increased employment of tea and coffee, and to the greater consumption of sugar and alcohol. Added to these factors is the growing tendency, especially among the unmarried classes, to eat outside of the home and to patronize the rapid-service, time-saving, sandwich dispensing restaurants and eating-houses.

The advantage of the sandwich is that it furnishes great concentration of nutrients in small volume. The work of mastication is reduced and the entire make-up of the product encourages rapid eating.

The sandwich is not as economical as is popularly believed. It is true that a palatable sandwich can be purchased for a few cents, but the same proportionate expenditure in the household or in

the purchase of a warm meal that deserves the name will procure surprisingly more nutrient, even in the more expensive type of restaurant. It has been calculated, for example, that twenty-five cents will buy:

	Calories	Gm. protein
In a public eating house....	3,990	containing 108
In a good restaurant.....	1,990	containing 78
In the form of sandwiches..	1,140	containing 30

The sandwich is frequently looked on as the “poor man’s lunch” and current practice is tending to increase its use. If it is really desirable to increase the purchasing power of a small daily income so as to increase the amount of food, the reform cannot be instituted by pointing to the supposedly inexpensive lunch-counter. The boarding-house and the home, says *The Journal of the American Medical Association*, wisely administered on the dietetic side still remain the most economical as well as most rational centers for food reforms.

TABLE 1.—VENEREAL INFECTION PER THOUSAND MEN.

	Years	Per Cent.
Germany	1905-06	19.8
France	1906	28.6
Austria	1907	54.2
Russia	1906	62.7
United States	1907	167.8
United Kingdom	1907	68.4

Kober gives a more recent table.

TABLE 2.—DIFFERENTIATED INFECTIONS PER THOUSAND MEN.

	Year	Syph- ilis	Chan- roid	Gonor- rhea	Total
U. S. Army	1909	30.45	30.77	135.77	196.99
U. S. Navy	1909	26.49	28.23	105.11	159.83
Japanese Navy ..	1907	.....	.....	.....	139.75
British Navy	1908	37.46	17.87	67.16	122.49
British Army ...	1908	35.1	28.23	40.7	75.8
Japanese Army ..	1907	10.1	10.4	17.1	37.6
Prussian Army ..	1907	4.4	2.1	12.2	18.7

These tables show conclusively that the English-speaking people are, in their naval and military organizations at least, much greater sufferers from venereal infections than the other nations.

In civil life there is less accuracy in presenting figures, but Cunningham says that 60 per cent. of men acquire venereal infections, some time, 20 per cent. of these are incurred before the twentieth year, 50 per cent. before the twenty-fifth

year, and 80 per cent. before the thirtieth year. Gerrish estimates that 10 per cent. of the population of New York has syphilis and that in 80 per cent. it is acquired between the ages of 19 and 35 years. Fischer thinks that 18 per cent. of the population of the United States is infected with syphilis and that there are 250,000 deaths each year due to venereal infections. Biggs finds that during 1912 there were 13,348 cases of syphilis reported, 24,980 cases of gonorrhoea, and 4,331 cases of chancroid, a total of 42,659 venereal infections reported by 1,500 of the 8,000 physicians in New York City, and not including hospital and dispensary figures. His judgment is that there were about 200,000 cases during the year. Morrow claims that 75 per cent. of adult males acquire gonorrhoea at some time, and that from 5 to 10 per cent. acquire syphilis. In Melbourne, Australia, 30 per cent. of 200 necropsies gave syphilitic findings. Five per cent. of the population within a ten-mile radius from the Melbourne post-office gave a positive Wassermann test.

The direct financial loss entailed has not been computed, says *The Journal of the American Medical Association*. A conservative estimate puts 10 per cent. of the insane in the Massachusetts asylums down to syphilis, and the yearly cost of their maintenance in \$300,000. Rosentein ventures the opinion that 20 to 25 per cent. of the inmates of our institutions for the blind are the result of gonorrhoea alone.

There is the loss that can only be guessed at in the reduced efficiency of business people from the acute infections, from the rheumatisms, and from the mental and physical weakening caused by the late lesions of syphilis—before the patient is compelled to give up work. Besides there is the absolute loss of time by people in their earning years. Accurate statistics from the various branches of the service are summarized by Surgeon-General Rixey in his report for 1909 in the statement that the disability from venereal infections if applied to the force afloat would have rendered entirely inactive for over a month, three battle-ships with a complement of one thousand officers and men each.

Blanchard offers as a substitute for bismuth paste the following: white wax 1 part; vaseline, 8 parts. Mix while boiling and inject at proper temperature.

SUCCESSFUL SEARCH FOR A TUBE OF RADIUM.

A tube of radium worth over \$5,000 was presented to the Liverpool Royal Infirmary. It was used in the treatment of a patient and fixed to his face in the ordinary manner by dressings and left in position all night. When a member of the staff arrived in the morning, he found that the tube was missing. The theory that the patient might have swallowed it was abandoned after a careful search with the Roentgen rays. It was then suggested that the tube might have fallen out and been removed with the sweepings from the floor of the ward. The cart which contained these sweepings was about to leave the infirmary, and orders were given for it to remain. The services of Wilberforce, the physicist of Liverpool University were requisitioned. When he arrived he placed his electroscope on the edge of the cart, and as a result was able to state that the radium was there. As it was then growing dark the search was discontinued until the following morning, the cart in the meantime being strictly guarded. The search was resumed the next day by Wilberforce and the infirmary officials. Dr. Holland, roentgenologist of the infirmary, got into the cart and emptied it of the rubbish, which was placed in buckets. When the twelfth bucket had been handed to Wilberforce he discovered in it the missing tube, which was deposited in safe keeping in the Roentgen-ray department.

AFFILIATION OF COLLEGE AND HOSPITAL.

Through the trustees of Columbia University announcement was made last week that the managers of the Presbyterian Hospital, New York, had reorganized the administration of scientific and therapeutic work at the hospital so as to provide for single responsibility for both medical and surgical services. Dr. Theodore C. Janeway, Bard professor of the practice of medicine at the College of Physicians and Surgeons, has been designated medical director of the hospital, and Dr. George E. Brewer, professor of surgery at the college, has been designated surgical director. Dr. William G. MacCallum, professor of pathology at the college, has been appointed pathologist to the hospital.—*Medical Record*.

A LETTER TO MEDICAL MEN.

Dear Sir:

Of all the discouraging cases which confront the general practitioner there are few more hopeless than chronic nasal and aural troubles. The difficulty of treating discharges from the ears is increased by uncertainty as to their etiology, the only fact that can safely be postulated regarding them being that they are the result of a mixed infection. For example, a bacteriological report recently obtained with reference to an ear discharge is as follows: "Films prepared direct from this swabbing contain many gram-negative and gram-positive bacilli, together with several gram-positive micrococci. The inoculated media yield cultures showing large numbers of bacillus proteus, small numbers of diphtheroid bacilli, and a few micrococci."

A considerable volume of evidence has been accumulated showing that Phylacogen, without operation or local treatment, not only frees the sufferer from excessive secretion, but also, even when the secretion is merely reduced in quantity, entirely gets rid of its unpleasant odor.

We have the records of a large number of cases treated with Mixed Infection Phylacogen.

Two cases are supplied by a surgeon. In both, the discharge became abundant and offensive after operation. Treatment was commenced with 1 Cc. Mixed Infection Phylacogen, the injection being gradually increased until a dose of 8 Cc. was reached. The reactions in both cases were of a comparatively mild character, and the result has been entirely satisfactory.

Another case is that of a professional man (43) who has suffered from a chronic nasal catarrh for some nine years, and deafness in the left ear for about a year, with difficulty in breathing through the left nostril. This gentleman does much public speaking, and in the frequent effort to clear his throat he often became quite hoarse. He received in all eight injections of Mixed Infection Phylacogen, doses

Mixed Infections.

Suppurating Antrum.

Catarrh with Deafness.

up to 10 Cc. being given. The reactions after the third, fourth and fifth doses were very severe, but the later doses did not cause much disturbance. He gradually lost his catarrh, and hearing returned at the middle of the course. The result has been most satisfactory, especially as regards the improved condition of his voice and throat in public speaking.

Another case is that of a housemaid (26), who when five years old had an attack of scarlet fever. Ever since then she has had discharge from the right ear, with almost complete deafness; could only hear a watch pressed close on the ear. Treatment was commenced on April 27, 1913, with injection of 2 Cc. Mixed Infection Phylacogen, doses being gradually increased to 10 Cc. After two or three injections the discharge increased in quantity, and became thinner, and thereafter gradually diminished. After eleven injections, extending over three weeks, the patient with her left ear on the pillow heard with the right ear for the first time in twenty-one years the clock ticking in her bedroom. Since then hearing in the right ear is almost as good as in the left.

General Health Improved.

One of the medical men from whose reports we have quoted concludes with the following remark: "In my opinion the most remarkable thing about these cases—even more remarkable than the cure of the catarrhs—is the great improvement in the general health which followed in the three to four months after the injections had been discontinued." This opinion is shared by every medical man with whom we have come in contact who has given Phylacogen a fair trial in suitable cases. Our recently issued pamphlets on "Phylacogen Therapy," 1914 edition, contain much interesting material on the new system of treatment, and we shall be glad to send them to you on request.

Very truly yours,
Detroit, Mich. PARKE, DAVIS & CO.

THERAPEUTIC NOTES.

LITERARY NOTE.—Be we financier, industrial worker, navy, scavenger, or merely a gentleman, we all suffer to a greater or less degree from the ills which our vocations or avocations engender. Just how to prevent, ameliorate or cure these but partly understood ills, should no longer be a puzzle to the man, employer or physician because a reliable and essentially practical book is soon to appear under the joint editorship of Dr. George M. Kober of Washington, D. C., and Dr. Wm. C. Hanson of Boston, Mass. Among the contributors are such authorities as Sir Thomas Oliver; Legge (London); Teleky (Vienna); Devoto (Milan); Edsall (Harvard); Alice Hamilton (Chicago); etc., etc.

P. Blakiston's Son & Co., Philadelphia, will publish the volume.

PREVENTION OF NEPHRITIS.—In scarlet fever, diphtheria, typhoid and other infectious diseases, it is a commonplace of practice to watch the urine and to take every precaution against nephritis. The discovery of the peculiar property of the chemical combination, $C_6H_{12}N_4$, to give off formaldehyde and other obscure but effective antiseptic agents, *at body temperature only*, was one of the most epoch-making in the history of therapeutics. Cystogen, a refined preparation of the afore-mentioned chemical, has been extensively prescribed for more than fifteen years and has been preferred to other products by many physicians on account of its uniformity of action and non-irritating property. More recently, Cystogen-Lithia (cystogen, 3 grs. and lithium tartrate, 3 grs.) in the form of an effervescent tablet has been given preference; one of these tablets dissolved in a glass of water, makes at once a proper dose and menstruum, to be taken at meal times or between meals, as the prescriber may direct.

TREATMENT OF A PERSISTENT BRONCHIAL IRRITATION.—In the treatment of a persisting bronchial irritation which manifests itself by moderate secretion of mucus and an annoying cough, Cord. Ext. Ol. Morrhuæ Comp. (Hagee) will be found of marked utility. It not only soothes the irritation but increases the mucosa's power of resistance and thus enables it the more quickly to correct the underlying morbid condition.

ABOUT HYPNOTICS.—It is a great satisfaction to have a hypnotic in which implicit confidence can be placed, confidence not only that the desired sleep will be produced but also that no harmful effects will ensue.

The dangers incident to the administration of many hypnotics should constitute a valid reason for their rejection, and on the other hand many harmless remedies are found to have insufficient calmative properties to produce sleep when pain or extreme nervousness attend the insomnia. Neither of these two classes are adapted for every day use. Too much uncertainty enters into their employment.

As a hypnotic for general service Neurosine is unexcelled. This preparation contains no deleterious

drugs and yet it is powerful enough to produce sleep even though pain is the causative factor of the insomnia. The great potency of Neurosine is not obtained at the expense of safety. The Dios Chemical Co., St. Louis, Mo., will mail trial quantities to physicians on request.

A RARE REPUTATION.—A rare reputation among soothing and soporific agents has been earned by PASADYNE (Daniel)—the concentrated tincture of pas-siflora incarnata. This enviable reputation has been gained by PASADYNE (Daniel) because of its potency of therapeutic effect coupled with its marked freedom from disagreeable influences. Even in moderate dosage its tranquilizing power becomes manifest. A sample bottle may be had by addressing the laboratory of John B. Daniel, 34 Wall St., Atlanta, Ga.

DRUNKENNESS AS A DISEASE.—Drunkenness as a disease is compelling a place in medical works and practice. When properly provided for there will be fewer inebriates in jail and more in hospitals. Alcoholism is not a delusion to be disposed of by mind-cure, which will no more cure disease than it can create one. The chronic drunkard is like the insane, the paralytic or epileptic, to be cured by medical means. A proper medical cure may be summed up as a general cleansing of the system from the poison and the effete products of faulty nutrition, and at the same time it is necessary to tone up the system beyond the need of resorting to what alcohol has heretofore afforded. Certain drugs, methods and discipline are necessary in the patient's behalf to break up the nervous habit and rhythm of inebriety, and such the Keeley system will be found. To the Keeley work we would invite the attention and cooperation of physicians, of whom over 17,000 have been cured by Dr. Keeley's methods since their introduction.—Reprinted from the *Canadian Journal of Medicine and Surgery*. Toronto.

THE KEELEY TREATMENT—FOR LIQUOR AND DRUG USING.—Successful for thirty-five years and still the best because we keep right up to date.

There are lightning cures for all diseases, including alcoholism and drug addictions generally, but when people know enough to understand that disease means gradual evolution—an adapting of the body and nerves to poisons and bad influences—they will know that cures cannot be made in a few days or "while you wait."

No doubt one habit can be substituted for another; one drug addiction for another; but to cure a habit and leave the patient normal requires time, patience and intelligence.

Short time cures are like giving morphine to stop pain, and when the pain is relieved declaring that the disease is cured.

To cure alcoholism, or the chronic poisoning of other drugs, the body must be brought back to normal, by the administration of proper nerve tonics and right living. The mind and body must be made normal, after which, if a right life is practiced, dependable health may be enjoyed.

Indeed, to evolve back to health takes time, patience and intelligence; to gain normal strength and full resistance, the patient must be taught how to live correctly.

Inebriety is a disease and must be skilfully and scientifically treated.

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ADVERTISING BY PHYSICIANS.

Following the midwinter Conference on Public Health, Legislation and Medical Education of the American Medical Association, held in Chicago, February 23 and 24, numerous news-items and editorial comments appeared in the public press regarding one of the papers presented at the Conference. The substance of the newspaper items was that the American Medical Association was considering the revision of its principles of ethics with a view to removing or modifying the restrictions placed on the individual physicians as to personal advertising. Some of the reports stated that revision of the principles of ethics would be taken up at once, and that an overwhelming majority of members of the Association were in favor of such a change. So far as we know, says *The Journal of the American Medical Association*, there is no intention or indication of any change in the position of the American Medical Association on this question; the reports in the newspapers were due to a misapprehension of the character of the paper in question and the intent of the writer.

The paper was an argument for a better understanding and closer cooperation between the medical profession as an organization and the newspaper publishers as a class. The author did not advocate or discuss the question of personal advertising on the part of the physicians; the proposition set forth and defended in the



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paper and presented to the Conference was something entirely different from personal exploitation; it was a plea for closer cooperation between medical organizations and the press for the public good, and not for personal benefit. It suggested that the expert knowledge of the medical profession could be utilized by the public press in two ways: first, by the dissemination through the newspapers of scientific knowledge which would be of value to the public in preventing disease, and second, in placing at the disposal of those newspapers which desired it the expert knowledge of the medical profession in separating worthy and reputable from dishonest and disreputable institutions which might seek publicity through the newspapers.

Of these two important activities one has already been inaugurated by the American Medical Association, and the other is worthy of serious consideration. Neither of them, however, has the slightest bearing on the question of personal exploitation of physicians through newspaper advertising or by any other means. An honorable physician could not conscientiously advertise for personal business, for the same reason that the honorable minister and lawyer would not advertise. A professional man has no commodity to sell; his only assets are his scientific knowledge and his personal ability; and he who claims to possess greater knowledge or greater skill than his professional associates—whether physicians, preachers or lawyers—is an egotist, or worse, and forfeits the respect of both his professional brethren and his fellow citizens.

PUBLIC LAUNDRIES.

“Cleanliness is next to godliness,” and it is also a prerequisite for health. If a community recognizes a responsibility for maintaining health, it must recognize the obligation which lies on it to make provision for public decency. This is the keynote of an article printed in the series of “American City Pamphlets” by Donald B. Armstrong, superintendent of the Bureau of Public Health and Hygiene of the New York Society for Improving the Condition of the Poor. Armstrong says that many communities supply means for the cleansing of human bodies, but it is just as essential to health and decency that public facilities for clean laundry should

be provided when private ones are lacking. Otherwise the tone of decency of the community is lowered. Expenditures usually understood as being for the benefit of the public health really mean as much for the promotion of public decency. Among the tenement dwellers of large American cities the facilities for washing clothes are decidedly meager, and the establishment of public laundries or wash-houses fashioned after the plan of those long in use in foreign cities is a present demand. There are about fifteen of these institutions in America, five of which are in Baltimore. Other cities which have found an urgent demand for them are Philadelphia, Buffalo and Elmira. Recently the committee of the bureau of which Armstrong is superintendent made an investigation of the necessity for wash-houses in New York, and the cost of their equipment, operation, etc. The investigation covered a population of about 400,000 in the poorer sections of New York, and it was found that from 30 to 45 per cent. of the families were without any washing facilities in the home, while no hot water except that heated in the apartment is provided in from 70 to 95 per cent. of the houses. Inquiry among 10,000 bathers at one of the municipal baths showed that the women were enthusiastically in favor of the establishment of public wash-houses, and many of the men promised to make use of such facilities. In Baltimore and Philadelphia special days are set aside for men, and there are many men who could use the facilities to advantage. Armstrong says that the educational value of the measure is important. The public wash-house finds its chief justification in the fact that it gives to the people an opportunity to appreciate the value of health and decency of being physically clean. Physical cleanliness, says *The Journal of the American Medical Association*, enhances moral and spiritual tone, and leads to a demand for better housing and better household equipment, which in turn make for better health and decency.

BIRTH MORTALITY IN FRENCH CITIES.

In the attempt to combat the causes of the decrease in population, attention has been directed for several years especially to infant mortality. While it is true that the high death-

rate of young infants is one of the chief factors in this decrease, it is one which can easily be corrected by proper precautions. Another factor, which is of somewhat less importance, is the birth mortality. It seems to have escaped notice until Dr. Chambrelent, professor agrégé at the Faculté de médecine de Bordeaux, recently published in the *Revue philanthropique* the results of an interesting research.

Chambrelent divided the cities of France into four sections according to population: first, Paris, with its 2,714,068 inhabitants; second, large cities with more than 100,000 population; third, medium-sized cities between 30,000 and 100,000, and fourth, small cities of from 5,000 to 30,000. He was able to establish the fact that the birth mortality per thousand inhabitants is greater in Paris than anywhere else. It is considerably greater in the large towns than in the medium-sized, and much greater than in the small towns. Another consideration was the annual variation in the birth-rates of the towns studied. If the number of births decreases, it is obvious that the birth mortality will be influenced by this decrease. In order that the results might not be vitiated by this consideration, Chambrelent determined the relation between the number of children born dead and those which, during the same period of time, had been registered as born alive. Here again it was shown that in the decade from 1896 to 1905, the period studied, the coefficient of birth mortality, that is to say, the proportion of the number of children born dead to those born alive, was much larger in Paris, diminishing as before according to the size of the town. Another thing which the investigation brought out was that the coefficient of birth mortality remains nearly constant for each group of towns, varying but slightly from year to year.

In France children are registered as having been born dead if they die before the time when they are registered. As the law permits a delay of three days between the time of birth and the time of registration, the number of the still-born is added to the number of children who die during delivery or afterward up to the time of registration. It would be desirable for the distinction to be made in registering between children actually born dead and those who die later. This is the custom in some other countries, as in Belgium and Italy.

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AN EXPERIMENT WITH TUBERCULOSIS.

The problems presented by the wide-spread existence of tuberculosis in dairy cattle are manifold. They bear on human experience in connection with the hygiene of the milk-supply, which is assuredly a matter of no small concern to all classes of society. The question of tuberculosis in cattle involves the economics of agriculture to a far greater degree than the uninitiated can appreciate; for the disease has manifested itself so widely that the hope of complete eradication must be deferred for a long time, to say the least. Furthermore, the outcome of the management of tuberculous herds may point the way for advantageous applications in the field of human treatment or prevention.

In view of the enormous practical difficulties in the way of complete eradication of tuberculosis in cattle by the wholesale slaughter of all animals known to be infected with tuberculosis, schemes for utilizing the latter have been devised. The most prominent of these is the system whereby tuberculous cows are isolated and used for breeding purposes, the calves being removed from the mothers at the earliest moment and brought up without further exposure to the disease. This has been rendered possible by the finding that such young are regularly born in perfect health, and entirely free from tuberculosis. The affected breeding cattle in this way do not become an entire economic loss. A ten-year investigation, carefully verified and supervised by government officials, has just been reported by Brooks in connection with what is probably one of the most valuable herds of Holstein-Friesian cattle in the world.

The object was to produce a herd of Holstein cattle free from tuberculous taint and yet endowed with all the most valuable strain-characteristics possessed by this breed. Animals were selected because of their desirability, entirely independent of the presence or absence of tuberculosis. The tuberculous animals greatly outnumbered the non-tuberculous. Three hundred tuberculous animals were studied. The existence of tuberculosis was determined by the administration of treble the official dose of tuberculin, repeated in non-reacting animals three times at intervals of six months. All animals reacting to either test were removed at once to the tuberculous farm so that there was no possibility

of the transmission of infection from the tuberculous group to the healthy one. At birth the calves are immediately taken from the mother. Feedings are on pasteurized milk collected indiscriminately from sound and tuberculous animals.

Of more than two hundred calves born of the tuberculous herd, not one has become tuberculous, although all have been tested three times by massive doses of tuberculin. These animals are rather more resistant to tuberculosis than animals born of non-tuberculous parents. No falling off in type, in milk production or fertility is present in these calves, no increase in death-rate exists among them as compared with the offspring of healthy cattle, no falling off in value takes place, and several of the most valuable cows and bulls in the world are of this ancestry. These facts, says *The Journal of the American Medical Association*, remain constant even where at least three generations of known tuberculous parentage exist.

 THE CAUSE OF EPIDEMIC SEPTIC SORE THROAT.

Three extensive outbreaks of septic sore throat in the past three years, in Boston, Chicago and Baltimore, have directed attention to the disease. The facts in regard to these and similar epidemics have been reported from time to time in *The Journal of the American Medical Association*. The relationship of the disease to the milk-supply has for some time been either suspected or confirmed. There has been a tendency, in the investigation of a number of epidemics, to conclude that the source of the infection is the inflamed udder of the dairy cow.

The evidence for the foregoing theory of infection has hitherto been circumstantial rather than positive and direct. The outbreak of epidemic septic sore throat at Cortland and Homer in the state of New York, during April of last year, gave an opportunity to demonstrate the correctness of the commonly held view. This outbreak cast suspicion on the milk-supply from one dairy. Over 70 per cent. of the cases in each community occurred among the patrons of a dairyman who was the only dealer selling milk in both places, and who furnished less than 7 per cent. of the total milk-supply. Adjacent

towns had no cases, and, further, they received no milk from the suspected dairy. As the result of an inspection of the cattle belonging to this dairy, two cows showing physical signs of udder inflammation were isolated from the herd and the use of their milk was forbidden. For the first time in the history of the investigation of individual cows for the existence of udder inflammation, a centrifugal milk-clarifier was used. By means of this apparatus the milk of all animals in the herd involved was examined and the sediment easily secured. The results in the case of the two suspected animals alone furnished sufficient evidence, by contrast with the milk sediment of the rest of the herd, to point conclusively to their udders as affected; and the microscopic examinations showing the pus germs discharged by the inflamed udder into the milk completed the proof.

Bacteriologic examination demonstrated that cultures from the throats of four patients contained streptococci identical with streptococci obtained from milk slime from the two cows suffering from garget. As it is now generally held that streptococcus is the cause of septic sore

throat, the predominance in the inflamed udders of garget cows of organisms of that type has drawn attention to their possible significance, and has suggested the probable original source of infection in man. We must not forget the possibility, however, says *The Journal of the American Medical Association*, that in addition to the primary infection of milk, infection may be accidentally introduced into it through its being handled by persons suffering from infection.

GIFTS TO CHARITIES.

By the will of the late William P. Sandford of Brooklyn, N. Y., the sum of \$5,000 is left to the Methodist Episcopal Hospital of that city.

The William W. Baekus Hospital of Norwich, Conn., receives \$15,000 by the will of the late John Eceles of Norwich.

The Exeter Cottage Hospital of Exeter, N. H., has received a bequest of \$10,000 from the estate of the late Mrs. Elizabeth S. Hall.

CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

ANTIVACCINATION BILL.

The Massachusetts State Senate on April 10 passed an antivaccination bill which provides that any person who has reached the age at which attendance at school is permitted or required, and who presents a written statement from a parent or guardian, or by himself, if twenty-one years old, which declares that such parent or guardian or person is opposed to vaccination, shall not, as a condition precedent to admission to the public schools, be required to submit to vaccination, except at the time of a threatened or actual outbreak of smallpox, when the school board shall temporarily debar such person from the schools.

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MINE SAFETY AND THE WORK OF THE BUREAU OF MINES.

According to the report for the year 1913 of Director Holmes of the Bureau of Mines, during the few years since the beginning of mine-safety investigations there has been a marked increase in the general interest taken by miners, mine-owners and the general public in questions relating to mine safety, and a marked decrease in the number of fatalities and injuries notwithstanding the increase in the number of men employed in the mines. The bureau has endeavored to organize and lead in the movement for mine safety, and in addition to its investigations has disseminated a large amount of information on accident prevention. In this work it has had the cooperation of state officials as well as miners and mine-owners. The activity of the bureau has resulted in increased efforts on the part of the mine laboratories and mining engineers to improve mine practice and better equip the mines with safety devices and rescue appliances. For instance, at present there are several thousand sets of rescue breathing apparatus in use, besides auxiliary equipment for fire-fighting. Rescue stations have been provided at which groups of men have been instructed in the use of apparatus and in mine-rescue work. This work is also conducted by private agencies and by the mine operators and the Red Cross; but the demands on the bureau for such instruction have not diminished. During the three years in which mine-rescue and first-aid work have been taught, 31,203 miners have been trained in the use of the necessary equipment and in methods. During 1913 over 46,000 persons (miners) visited the mine-rescue safety-car and stations maintained by the bureau, nearly 33,000 miners attended the lectures, and more than 5,500 were given rescue or first-aid training.

demonstrated in Manchuria during the winter of 1910-1911 by one of the most virulent epidemics of modern times. Authorities agree that air infection plays no part in the spread of bubonic plague. It is primarily a disease of rats, and is spread to man almost exclusively through the agency of fleas. Bubonic plague may be treated in general hospitals without danger, if only the place is kept free from vermin. Pneumonic plague, on the other hand, is usually highly contagious. Just how it is carried from one person to another has not been known. The work of two American physicians, recently published, throws light on this question. It is now believed that the disease is air-borne. Drs. Teague and Barber, two American surgeons, offer an explanation of the rapid spread of pneumonic plague in Manchuria and its failure to spread in India. The plague bacilli contained in fine droplets of pneumonic-plague sputum die in a few minutes unless they are suspended in an atmosphere with an extremely small water deficit. Such an atmosphere is, under ordinary circumstances, of common occurrence in very cold climates, whereas it is extremely rare in warm ones. Hence there is a greater tendency for the disease to spread in cold climates than in warm ones.

During the Manchurian epidemic the temperature at Harbin, where the great majority of deaths occurred, ranged between -9 and -32 C. (from 15.8 to -25.6 F.) The native buildings are inadequately heated in winter. Several of them showed temperatures of 6 C. (41 F.) or less, and records of 10 C. (50 F.) were quite common. Such facts, says *The Journal of the American Medical Association*, indicate that atmospheric temperature is an important factor in the spread of pneumonic plague.

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ATMOSPHERIC TEMPERATURE AND PNEUMONIC PLAGUE.

Why bubonic plague should prevail in epidemic form over such long periods of time, whereas pneumonic plague has been confined to scattered cases, has been a mystery until recently. That pneumonic plague can assume epidemic proportions under certain circumstances was

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readily becomes a chronic condition since the toxemic patient lacks that initiative which is necessary to active physical exercise; thus *cause* and *effect* form a circle which must be broken by rational therapeutic treatment while proper hygienic conditions are being re-established.

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MORTALITY AND THE TIME OF DAY.

E. Billing, in the *Practitioner* for March, states that he became interested in the popular belief that time of day or night had a marked influence on mortality, that more sick persons died during the night than during the day, and that the most fatal hours were those of the early morning. He therefore analyzed a series of 10,000 deaths in both sexes, from all causes,

at all times of the year, and at every age, which occurred at the Poplar and Stepney Sick Asylum between 1899 and 1913, and found that none of the three items of general belief was entirely true. His figures taught that the time of day or night did have a slight effect, although there was no appreciable difference between day and night mortality. The most fatal hours were those of the early afternoon; next, those of the early morning; while the least fatal hours were those from 7 to 11 a. m.—*Exchange*.

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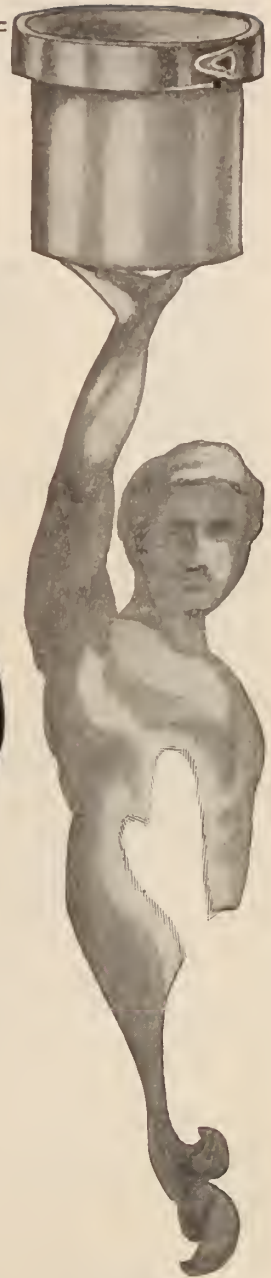
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Philanthropist—What are the items?

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—(*Med. World*).



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VOL. XX.

JUNE 15, 1914.

NUMBER 6

ORIGINAL ARTICLES.

ACUTE PANCREATITIS.*

BY

JOHN F. ERDMANN, M. D.,
New York.

From the Department of Surgery, New York Post-Graduate Hospital and Medical School.

The most interesting yet confusing feature of pancreatitis is that of the intense toxemia seen in many of the patients. This very condition is to me of most weighty importance and aid in making a diagnosis, a conclusion which I feel can be reached in the majority of the patients when seen early, provided a careful history has been taken. The literature on the subject of acute pancreatitis is fairly studded with cases, while that of the causation and the origin of the toxemia is still in a largely hypothetical state of confusion.

The types of pancreatitis may be classified tentatively as hemorrhagic, sloughing or gangrenous, and suppurative, yet the two latter varieties are really but stages of advancement of the hemorrhagic. Several authors have named an additional type, the apoplexy of the pancreas or pancreatic apoplexy.

It is conceded by practically all observers that the anatomical arrangement of the ducts of the pancreas and those of the gallbladder, with their combined entry into the duodenum, is responsible for the majority of the cases of this disease. One has but to recall the relation of the ducts of Santorini and Wirsung to the common duct, and then recall the ampulla of Vater to orient himself as to what damage a stone lodged in the ampulla of Vater or in the papillus can create by damming back the flow of bile, thereby having it (the bile) seek passages of least resistance, the pancreatic ducts, either singly or

combined, thus producing the injection of bile into the pancreatic gland.

This injection of bile into the ducts was demonstrated as a distinct cause by Flexner and others, years ago. Again, the arrangement of the papillas and ducts does allow of retrograde injection of duodenal contents into the pancreatic system, thereby producing the necessary irritation or trauma to cause at least experimental pancreatitis. It is also a fact that this disease is not infective in its onset, and that when the suppurative stage arrives, the infection is a secondary process. The anatomical arrangement of the ducts, and the fact that biliary tension by back tracking is a cause at least of experimental pancreatitis, indicates one of the surgical means of combating or curing this process, namely cholecystostomy, thereby relieving the tension and draining away noxious agencies and infection that may be associated factors in the production of this disease.

Guleke, of Berlin (*Experimental Pancreas Affections, Archiv für klinische Chirurgie*), has been studying on a large number of dogs the affections of the pancreas induced by injections of bile, blood, and oil in the outlet of the pancreas, also by ligation of its bloodvessels. He states that the disturbances resemble very closely those of acute pancreatitis in man.

The causes of death in acute cases have been summarized by Doberauer. (*Beiträge zur klinische Chirurgie*, xlviii, 2), in an analysis of six acute cases and thirty-five experiments on dogs, as due to a toxin; and Guleke demonstrates, in his experiments cited above, that in his acute necrosis cases death is due to an intoxication with trypsin. These arguments of Guleke and Doberauer are taken from my thesis entitled, *Acute Pancreatitis, with a Report of Five Cases*, published in the *American Journal of Obstetrics*, liv, 6, 1906. It is interesting to note that in the seven years elapsing since publishing this thesis, nothing of much more definite significance in the cause of sudden death has been projected. Speese, Sailer and Torry (*Transactions of the Association of American Physicians*,

*Read before the Vermont Medical Society, the centennial meeting, Burlington, October 10, 1913, and before the Newark Academy of Medicine, surgical section, October 28, 1913.

xxvi, p. 446, 1911), in an article entitled Further Experiments in the Toxemia of Experimental Acute Pancreatitis, acknowledge the arguments of toxemia as advanced by Guleke, Von Bergman, and Doberauer, but consider the work of these investigators as not conclusive.

On the basis of their findings, the authors feel justified in saying that at the present time, there is no reason to believe that the toxemia of acute pancreatitis is caused by any absorption of the external secretion of the pancreas. Although the experiments are still incomplete, it appears justifiable to conclude that in the course of acute pancreatitis, the blood content in globulin is greatly increased and that either the globulin itself, or substances adherent to it, constitute the toxic element causing death.

Schittenhelm (*Biologische Studien, etc., Zeitschrift für Immunitätsforschung*, xiv, p. 609, 1912), concludes that the toxic properties of histon and of the protamins may possibly play a part in the pancreatic necrosis, etc. Lattes, in an elaborate communication (*Ueber Pankreas Vergiftung, Virchow's Archiv*, ccxi, p. 1, 1913), makes the following statements:

The escape of pancreatic juice into the abdominal cavity after a lesion of the duct of Wirsung, or by injection of pure pancreatic juice, the proteolytic effect of which upon the albuminous substances of the body is very slowly manifested, does not give rise to a general intoxication, the local effect being limited to fat tissue necrosis, which in no way interferes with the health of the animal.

The escape of pancreatic juice, the proteolytic effect of which is increased and accelerated by the presence of enterokinase, although not a fat splitting kinase, leads promptly to death, with characteristic symptoms and pathological anatomical findings.

Enterokinase, when injected alone, is entirely devoid of effect; accordingly the fatal action is dependent upon the increase of the proteolytic power through enterokinase, and is therefore related to the increased rapidity of the proteolysis.

Maragliano (*Le cause della morte per necrose pancreatica, Policlinico*, February, 1912), believes as a result of his experiments that the cause of death is poisoning, the poisons, however, not being derived from saponifications, from ferments, or from autolytic products of

the pancreas, but taking their origin from a combination of the products of the autolysis of the organ with the fats of the body.

Polya (*Ueber die Pathogenese der akuten Pankreaserkrankung, Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, xxiv, 1, 1912), carried on experiments with the following conclusions: "The injection of intestinal contents, more particularly duodenal contents, led to acute pancreatic necrosis and hemorrhage with fat tissue necrosis or, in other cases, to chronic interstitial changes of the pancreas. Infected bile is much more apt to produce pancreatic or fat tissue necrosis than noninfected bile. Bacteria by themselves possess a relatively slight power of activation. Bacterial cultures and infiltrates, when injected into the pancreas without bile, were found to be much less harmful than when injected with bile. The destruction of this organ in the acute affection of the pancreas is caused by autodigestion of the gland, usually started by active bacteria."

It is needless to recall to your attention the arguments offered in regard to cholecystectomy in gallbladder disease. As near as I can recall, it was Opie who maintained that the retention of the gallbladder when possible is a means, through its individual mucous secretions, of rendering the bile less noxious as a pancreatic irritant. That there is an association in the etiology of this disease with preexisting gallbladder infection or cholelithiasis cannot be doubted. Alcohol and syphilis have each been given their due importance as factors of origin, but in my own series of cases I am unable to associate either as factors of weight. It is true that males, usually fat, heavily set subjects, are more frequently reported to be suffering from this disease.

As a result of the above quoted experimental causes we must include the injection of duodenal contents into the pancreatic ducts and their tributaries, as well as the extension of bile by obstruction, tension, and damming back, due to whatever cause, biliary or pancreatic, stone, gastroduodenitis, etc.

As previously stated, we classify the disease as hemorrhagic, sloughing or gangrenous, and suppurative, and a fourth or distinct class is recognized by some, the apoplectic. This last, the apoplectic, presents the appearance of a large

hemorrhage in and about the pancreas, in contrast according to most authors to the hemorrhagic.

The hemorrhagic form exhibits marked edema or infiltration in the retrotransverse colic area. The gland is swollen and tense under the reflection of the peritoneum, and stands up as a blue black firm body, readily seen through the gastrohepatic omentum or the gastrocolic; it is accompanied by a variable quantity of bloody serum, and if the disease has advanced sufficiently, is also accompanied by fat necrosis. Opie says fat necrosis is a consequence of pancreatic disease and bears much the same relation to pancreatic lesions as does jaundice to hepatic disease.

Fat necrosis is evidenced by the characteristic yellow white plaques of variable size, scattered through the omentum and mesentery. In this latter situation the areas of necrosis are apt to be much larger than in the former. The fat necrosis was shown by Langerhans (*Virchow's Archiv*, cxxii, 252, 1890) to be due to the splitting of the fat into fatty acids and glycerin. The fatty acids are deposited and the glycerin is absorbed. Then follows a calcium salts combination with the fatty acids.

As stated before, the sloughing and suppurative pancreatitis are but successive stages of the hemorrhagic. In the sloughing stage the absorption of the fluids seen in the hemorrhagic has largely taken place, or may never have been present. Protective adhesions have formed. The pancreas has a grayish yellow appearance, feels boggy and semifluctuating, and can be extracted in pieces like any ordinary slough. The suppurative change is merely a liquefaction of the former gangrenous or sloughing stage, plus bacterial infection, usually with well walled off protection by means of the omentum to the transverse colon and jejunum, etc.

I quote my earlier symptomatology as given in my thesis. The onset of this condition is usually a sharp pain accompanied with varying degrees of shock, rapidly followed in some cases by a profound toxemia, denoted or characterized by a peculiar cyanosis or lividity, with shallow breathing and rapid pulse. Halstead has called attention to this lividity, which is most marked on the abdomen and in the flanks.

The pain is usually of a far more intense degree than that of appendicitis or gastric perforation, in fact, my suspicions were aroused in

several of my cases by the report of quantities of morphine necessary to control pain. Hiccough is a symptom of relative frequency and persistence. Vomiting accompanies and follows the pain. Pain in the back, of an intense splitting character, has been evident in several of my patients.

Korte calls attention very forcibly to midepigastric pain and resistance as a strong diagnostic factor, but one must bear in mind that perforated gastric ulcer, gallbladder disease, and duodenal ulcer produce the same condition. He also, with others, calls attention to the swelling seen occasionally in the lumbar (left) region in patients with sloughing and suppuration. These symptoms and signs, when considered with a history of previous digestive disturbance and gallbladder or duct invasion, should cause the observer to give the diagnosis of pancreatitis great weight. The subsequent manifestations are those of a toxemia, with tumor in the epigastrium in a certain proportion of patients.

While agreeing with Fitz, to whom we owe the greater part of our knowledge of this disease, I cannot say that the epigastric tumor has been a manifestation in the first or second twenty-four hours, but usually after the third day. Later, abdominal tympany, aggravated hiccoughing, obstruction, either dynamic or toxic, etc., supervene.

DIAGNOSIS.

Diagnosis is rather difficult in the main, but correlating the marked pain at the onset, sharp intoxication, dyspnea, lividity, and intense backache seen in some patients, one can arrive at a tentative diagnosis of pancreatitis in distinction to perforating ulcer, intestinal obstruction high up, biliary colic, etc.

Fitz's rule (see *Robson and Cammidge*, p. 399), is worth bearing in mind: "Acute pancreatitis is to be suspected when a previously healthy person, a sufferer from occasional attacks of indigestion, is suddenly seized with violent pain in the epigastrium, followed by vomiting and collapse, and in the course of twenty-four hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight rise of temperature."

At this point in diagnosis, mention must be made of the diastase tests of Wohlgemuth and Noguchi (see editorial article in *Journal A. M.*

A., 1912, on a communication by these authors originally published in the *Berliner klinische Wochenschrift*, xlix, 1912). These experimenters found an increase in diastase in the blood in cases of pancreatic trauma. The search for diastase was based upon the findings of Wohlge-muth, who, after resecting a portion of the pancreas, found diastase in increased quantities in the blood and urine. This also occurred in blocking the pancreatic ducts. The suggestion is made that, by testing for and finding excess diastase in acute abdominal conditions, chiefly traumatic in origin, the reaction produced would eliminate the explorations for suspected pancreatic lesions, and might be of the same importance in diagnosing acute pancreatitis. The further naive suggestion is made by the authors that to prove the foregoing contentions will require observation on many patients. The authors hold that the results in this test can be obtained in a short time. Should this be true, then in nonacute cases one might add this test to his scientific qualifications as a diagnostician.

Bearing upon the mortality, diagnosis, etc., it is interesting here to quote a few statements from Korte, of Berlin (*Surgical Treatment of Acute Pancreatitis, Annals of Surgery*, 1912), who remarks the difficulty in arriving at a mortality rate and states: "When I cut from this list the cases which have been mentioned twice, I found that I had one hundred and three cases with forty-one recovering and sixty-two deaths, or sixty per cent. mortality." He states further that it seems better to consider his own experience, and reports forty-four cases of acute pancreatitis and their sequels. Thirty-eight of them were operated in, and in thirty-four of the latter the diseased pancreas was directly attacked, in the remaining four merely the concomitant gallbladder disease, and all ended fatally. He therefore concludes that the pancreas also should be attacked. Of the thirty-four patients operated on in whom the diseased organ, the pancreas, was immediately attacked, eighteen recovered and sixteen died. His sex record reads "males 30 and females 14, the youngest 16, while the greatest number had reached their fourth or fifth decade, and the oldest seventy years."

Briefly summarizing my personal work in this disease, I find I have operated upon thirteen patients, of whom ten presented hemorrhagic and fat necrotic cases, one female sloughing, one

male and one female each suppurative. I have also seen in consultation three males in whom the diagnosis was made of, in all probability, acute pancreatitis; the conditions being so grave as to preclude operation, were followed by confirmatory autopsies.

The operative deaths were, suppurative, female, one, hemorrhagic three, two males and one female; the suppurative death occurred some weeks after the operation. Several subsequent incisions were made to evacuate pus for secondary abscesses. The hemorrhagic cases that ended fatally were one female with over 2,350 stones in the gallbladder, the patient being all but moribund at the time of the operation. The second patient, male, died from successive hemorrhages due to necrosis of vessels in a completely destroyed pancreas, the autopsy showing almost no pancreas left, and two gallstones in the duct of Santorini; these evidently being the cause. This patient had been ill thirteen days when I saw him.

The second male to die was one with a typical recurring gallbladder history, and a history of eating two pints of cherries and two bags—about two pints—of peanuts for a race track luncheon. He had been ill about ten days and was despaired of when I saw him. Numerous gallstones were found, with profound necrotic areas, much fluid in the peritoneal cavity, and a large hemorrhagic pancreas. He died in thirty-six hours in spite of all efforts. In neither of these hemorrhagic deaths was any infection noticeable; each patient had suffered ten days or more when seen by me. The peritoneum and viscera upon operation were not in a state of inflammation, but presented rather the picture of a venous stasis, a lividity not unlike, but more intense than, that seen upon the abdominal wall. These three hemorrhagic deaths were evidently toxic, while the patient with suppuration died from sepsis. Thus the mortality in my series of thirteen operative patients with four deaths equals 32.5 per cent. Of these thirteen operative patients there were eight females and five males, while in all patients suffering with this disease, proved on operation or autopsy, seen by me the sexes were equally represented. My youngest patient was a female twenty-two years old; the oldest operated on was sixty-three years old; the oldest nonoperative of the three autopsies a male of sixty-five years. In but two of these sixteen

patients could a history of moderate alcoholism be obtained. In all but two, in whom the gallbladder was not searched for, cholelithiasis was present. Syphilis was suspected in but two. There is no question that many mild attacks of pancreatitis escape without operation, just as mild gallbladder and appendix attacks escape operative procedure. This view is expressed by all operators of any experience in this disease.

TREATMENT.

Owing to the rapidly fatal tendency of this disease in many patients, early operative procedure is indicated. Personally I am inclined to the earliest attack possible, feeling that free drainage with enteroclysis and subcutaneous infusion is the solution for a favorable result. I have never drained posteriorly, although I can see the advantages in a marked sloughing case in the costovertebral incision, but would advise with it profound drainage through the front. I have made a median or lateral incision in all the operative patients of mine, draining through the gastrohepatic, gastrocolic, and transverse mesocolic structures.

The peritoneum over the pancreas is freely punctured with a blunt instrument, or torn, and in the majority of instances free blunt punctures have been made in the body of the pancreas. Recently, in a sloughing pancreas, I made liberal drainage through all these routes, having one drain emerge under the transverse colon, one above or between the transverse colon and the stomach, and another above the stomach through the gastrohepatic omentum, with a recovery. It is in such a case as this that the posterior incision might or might not be beneficial.

Deaver feels that, with the accumulation of fluid in the lesser peritoneal bursae, the posterior drain is demanded. This does not appeal to me any more than the necessity for draining posteriorly in a badly mused gallbladder infection would, and I think I can say that none of us see the necessity of opening into Morton's space through the rear in these patients, as they recover without such procedure.

Objection has been raised to the posterior incision alone as an insufficient means of drainage, based on the inability to reach the head of the pancreas which overlies the spinal column, and

therefore can be more easily and safely reached by the anterior route. It is policy to bear in mind the influence of gallbladder disease upon affections of the pancreas; therefore evacuation of the contents of the gallbladder and drainage of this viscus is strongly advised.

Bearing upon this additional drainage, I reported in my thesis five cases of pancreatitis in which cholecystostomy was done in two of them. Both of these patients died, while in the third, that recovered, the gallbladder was not drained. These, I think, were merely coincidences. Since then I have drained the gallbladder in each patient operated upon for acute pancreatitis.

CASES PREVIOUSLY REPORTED (1-6).

No.	Female.	Male.	Age, years.	Hemorrhage.	Gangrene.	Suppuration.	Result.	Name, etc.
1	1	..	53	1	..	..	D.	Dr. Dan.
2	1	..	32	1	..	..	R.	Duffy.
3	..	1	44	1	..	..	D.	Two in Wirsung ducts g. s., Catt.
4	..	1	49	..	..	1	R.	Spaner.
5	1	..	63	..	..	1	D.	Altman.
6	1	..	22	1	..	..	R.	Piermont.
7	1	..	38	1	..	..	R.	Freeman.
8	..	1	47	1	..	..	R.	Cowan.
9	..	1	55	1	..	..	D.	Johnson.
10	1	..	26	..	1	..	R.	Selzer.
11	1	..	56	1	..	..	R.	Ohlbaum.
12	..	1	35	1	..	..	R.	Auerbach.
13	1	..	38	1	Sondheim.
Not operated in	..	1	50+	1	D.	Dr. Hutchinson.
	..	1	65+	1	D.	Dr. Getty.
	..	1	50+	1	D.	Dr. Scales.

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An editorial in the *New York Medical Journal* of April 11 reveals an alarming condition of the profession in Philadelphia. Upon the authority of Dr. Joseph D. Farrar, chairman of the committee of the American Medical Association on hospital and dispensary abuse, it is stated that fifty per cent. of the physicians of Philadelphia are getting only fifty-cent fees for office consultations, twenty-five per cent. twenty-five cent fees, and about three per cent. only ten-cent fees.

PERSONAL EXPERIENCE WITH THE CLUB-FOOT.*

BY

S. M. DINSMOOR, M. D.,

Keene, N. H.

It might be a comparatively easy task to write a resumé of club-foot, etiologically and anatomically, together with treatment as presented by leading surgical writers of the past and present, but that is not my object in the presentation of this brief paper. I shall speak only of the few cases which have actually occurred in my own practice during the fifty years of my professional experience, and the conduct of more than seven hundred obstetrical cases, only four cases of congenital club-foot have appeared, or considerably less than 1%. I don't know how this rate will compare with the experience of others, but in my own observation, these cases have been quite rare. I desire to speak of these few cases somewhat in detail, more particularly to show results of treatment adopted in each.

Case I. Congenital talipes varis of medium severity, especially affecting the tibio-tarsal joint of right foot. Nothing was done or attempted until the boy was a year or more old. Of course at this time only surgical interference would avail anything. I operated on this case by dividing the tendo achilles, the internal lateral ligament, also the plantar fascia. After division, the foot was placed in an over-corrected position and a plaster-of-paris dressing applied. This was renewed several times within the next few weeks. Subsequently, from careful measurements, a club-foot retention shoe was obtained, and worn mostly for two years. This had to be renewed occasionally, allowing for the normal growth of the foot. The result of this case was fairly good, though I could hardly say that the foot was quite as perfect as the other.

Case II. This was a case of a severe grade of congenital talipes varis of right foot. At this time I had never heard of treating a case of this kind by any other than surgical means, though Holmes' Surgery mentions the fact that slight deviations may sometimes be treated successfully by manipulation. Erickson makes no reference to treating these cases by manipulation.

Gross mentions this method as applicable only to cases of slight deformity.

It occurred to me, however, that this was a case, which if manipulation failed, subsequent operative measures could be adopted, hence nothing would be lost by giving it a fair trial. The nurse in this case was a very good massagist, and I directed her to use massage thoroughly and systematically, from the day of birth as long as she remained in the family. The mother of the baby during this time was carefully instructed to continue the massage and manipulation, which she did in a very intelligent manner, more or less until the child was a year old. At this time a shoe was fitted to the foot with a high counter, extending above the ankle joint. No other apparatus of any kind was used at any stage of the treatment. Result: A perfectly normal foot in every way.

Case III. This case of talipes was one of very peculiar deformity. The dorsum of foot was turned completely back, resting in front of tibia, while the tibio-tarsal articulation was laterally much distorted. The treatment was practically similar to the previous one, and result a perfect cure.

Case IV. This was a case of double congenital talipes varis, both of medium degree of severity.

The general treatment by manipulation and massage was attempted in this case, but the family was ignorant, and the nurse very inefficient, consequently the improvement was not especially satisfactory. This baby was bottle-fed, and died when less than three months of age of gastro enteritis. It will be seen, therefore, that this case was not a fair one to test the value of massage and manipulation but in all probability had the child lived, would have later required surgical interference.

Remarks: I find that the later surgical works mention this method as applicable to many forms of talipes. The last edition of Park's Surgery speaks of this manner of treating these cases, and says that a large number can be so treated successfully. A correspondent in the *Lyon's Journal*, as quoted by the *Journal of the American Medical Association* speaks of the method of Massage and Manipulation as used by the French surgeons and extols it as extremely effectual and believes the results may be perfect in 50% of the cases.

The treatment should commence the day of birth, for at this time the tissues are remarkably elastic and kept up progressively and continuous-

*Paper read before the Conn. River Medical Association at Bellows Falls, Vt., May 6, 1914.

ly. By the age of two months the tissues are too firm to commence effectual massage.

Fink, the French correspondent quoted, recommends the maintaining the correction obtained by a flannel bandage wound over a hard sole with a thick felt lining, but in my own cases nothing in shape of retaining apparatus was used. It is hardly wise to draw conclusions from my limited experience, but I believe that 75%, at least, of the different varieties of talipes can be successfully treated by the intelligent use of massage and manipulation.

GOITRE AND ITS SURGICAL TREATMENT.*

BY

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The thyroid gland is situated at the upper part of the trachea, and consists of two lateral lobes placed one on each side of the trachea and connected together by a narrow transverse portion called the isthmus. In the human being the gland weighs from one to one and a half ounces. It is larger in females than in males, and becomes slightly increased in size during menstruation. It is conical in shape, about two inches in length and from three-quarters of an inch to an inch and a quarter in breadth. The isthmus connects the lower third of the two lateral lobes; it is about half an inch wide and covers the second and third rings of the trachea.

We can readily see that the structure of this gland is most important when we consider that its blood supply arises from approximately the same sources as the vessels supplying the circle of Willis, and that its vascular area is the same as that for the brain. Under certain conditions of thyroid activity the vessels supplying it enlarge considerably and the gland grows rapidly in size. This will account for the exhilarated condition that occurs in acute cases which run a rapid course to a fatal termination.

There is, however, a large factor of safety provided in all these structures which would

indicate that a portion of the gland stated as probably one-sixth, would be sufficient to furnish the necessary secretion. There is a wide variation in the structure of the ductless glands, due to failure to completely develop, and to various forms of degeneration which occur after development has been completed, without sickness or symptoms.

According to Lorand, the deferring of old age requires the continued presence of some thyroid throughout life. The creten is the child without thyroid from birth. The loss of thyroid in the adult causes myxedema.

Exophthalmic goitre and hyperthyroidism are terms which have been applied to a disease recognized by a group of varying symptoms which have been described for the past one hundred and fifty years, at first as Morgagne's disease—Flagani, 1802, then Parry's, 1815, Moebius' disease, later Graves' and then Basedow's disease. It was not until 1885, when Moebius attributed the condition to a derangement of function of the thyroid gland, that a true advance in knowledge was made.

From 80 to 95 per cent. of the cases occur in women, and most frequently between the ages of fifteen and thirty years. The disease is rare in childhood, but is not uncommon after the fortieth year.

It is impossible in the human being to describe just what constitutes a strictly "normal" thyroid. There are conditions of the gland which must nearly approach it and wide variations from it which apparently give no symptoms. It is evident that an increased secretion of the gland occurring with increased parenchyma must often be neutralized in the body, as symptoms do not always manifest themselves until some shock or break in the equilibrium of the nervous system renders the condition apparent. It is also evident that less thyroid seems to be necessary in advancing years. It would appear that the disease is on the increase according to the increasing number of operations that are being done for goitre; or that we are making a better diagnosis than in the past, judging from the number of cases that have been observed and treated in our own city in the past year. This is especially noticeable since we have been filtering our water supply, and seems to give evidence in favor of the commonly accepted theory that it is a water-borne irritant which acts in the gland.

*Paper prepared for and read at the meeting of the Windham County and Connecticut Valley Medical Societies.

Kocher and Londstron give as the predisposing factors in eighty-six cases:

Gradual onset with etiological factors unknown	28	cases
Pregnancy	10	"
Chlorosis	7	"
At first menstruation	6	"
After fright, shock or grief	5	"
After fatigue	8	"
Infectious diseases (Influenza)	13	"
Old simple goitre	5	"
Sojourn at high altitude	1	case
Appendicitis	1	"

The classical pathognomonic symptoms of Graves' disease are tachycardia, exophthalmos and tremor.

Exophthalmic goitre has been treated by galvanization, x-ray and the specific serum as well as by well known drugs, such as digitalis, strophanthus, ergotine and quinia hydrobromate.

There is a variation in the nervous system of the individual affected by the hyperactivity of the gland, so we may look for all degrees and stages of this chronic disease, which has now, however, become quite generally accepted throughout the world as amenable to surgical treatment.

I will now give a report of five cases which have come under my observation within the past eighteen months and have been treated surgically.

Case I. Miss Mary C., age 20 years, admitted to hospital Nov. 18, 1912. She gives the following history. Had been in poor health for three years previous to admission to the hospital. She was under medical treatment for present trouble for eight months. One year ago her neck began to swell, more marked on left side. This swelling has continued up to the present time. It is about the size of an egg. At times the pressure would cause a sense of suffocation and it would affect the vocal chords. One of the early symptoms was the extreme sweating of the palmar surface of both hands. Upon holding her hand out the drops of sweat could be seen falling. There was a marked tremor of the hands. She was extremely nervous and irritable, would cry easily, pulse rate 120. Slight exophthalmus. She was unable to walk any distance without great fatigue, slept fairly well, said she was obliged to lie down most of the time for several weeks before coming to the hospital. All symptoms were aggravated at the menstrual period. A new symptom observed in

this case of exophthalmic goitre, by the patient was a swelling of the gland upon the approach of a storm, either rain or snow.

Operation Nov. 18th. Left lobe of gland removed. The wound was closed by subcutaneous stitch, healed by first intention. Patient was sitting up on third day and left hospital on eighth day. All symptoms improved.

On May 2, 1914, at my request, patient came to my office and reports as follows:—One year and five months after operation she had gained 10 pounds in weight, pulse rate 70, her nervous symptoms have disappeared, but she still has some sweating of hands. The right lobe has increased somewhat in size. Her general health is better than ever before. She is able to do some light work at home, and is ready to have a portion of gland removed at any time, should it be considered necessary. She still observes that the gland swells at the approach of a storm, either rain or snow.

Case II. Mrs. D., widow, age 30, admitted to hospital August 19, 1913, with the following history. About a year and a half previous to admission to the hospital the patient noticed a slight swelling of the neck, which grew slowly, but continuously, and she developed the following symptoms—First complained of pain in shoulder and chest, accompanied by a sense of pressure on heart, breathing extremely difficult while lying down, slight increase in pulse rate, extreme nervousness, hand would shake, knees would fail to hold her up and she would stagger while walking as if intoxicated. In April, 1912, five months previous to her operation, she noticed a protrusion of the eyes. She began to have fainting spells every day, and soon the swelling of the neck became more marked. She became restless and irritable, so nervous she was unable to sleep, continued to work, however, until two weeks before admission to the hospital, as she was the sole support of three orphan children under eleven years. During these two weeks she was confined to her bed, as she was unable to raise her head from the pillow without fainting. The nervous symptoms became extremely aggravated and she was advised to have an operation, as medical treatment failed to give her any relief. Examination showed an enlargement of the thyroid gland on the right side the size of a small orange, pulse rate 120, tremor and sweating of hands, easily excited, extremely nervous, slight exophthalmos.

Operation August 20th. Right lobe removed without serious trouble, wound closed with subcutaneous stitch, healed by first intention. She became less nervous while in the hospital, pulse

rate between 80 and 90, general condition improved, and she left the hospital in eleven days. Patient was not seen again until May 1, 1914, eight months after operation. She has gained 22 pounds in weight, pulse rate is 80, the sweats the nervous tremors have entirely disappeared, the exophthalmos shows to a very slight extent. She is supporting herself and three children by keeping boarders, doing the entire work for a family of eight, and says she is perfectly well, and a firm believer in the treatment by operation of exophthalmic goitre.

Case III. Miss I. T., age 16 years, school girl, was admitted to the hospital September 4, 1913. There was nothing remarkable in her history up to about four years ago when she noticed that there was a bunch in her neck. This did not bother her at first, but it has grown continually, although very slowly. During the past summer, however, the size has increased rapidly until now it is about three inches in diameter. It did not give her any special trouble until the past two months. During this time it has interfered with her breathing and talking. Menstruation has been regular and normal up to four months ago. Since then she has flowed excessively every two or four weeks.

Examination showed an enlargement of the right lobe of the thyroid gland, a tremor of the hands, no bulging of the eyes and a pulse rate of 110.

Operation. The right lobe of the thyroid was excised on September 5th and the wound closed by a subcutaneous stitch. The wound healed by first intention. On September 6th, the pulse rate was 98, and this gradually decreased until she was discharged on September 21, 1913, when it was 74. In hospital 17 days.

Case IV. Miss R. M., age 28 years, school teacher, was admitted to the hospital on January 31, 1914. She gave the following history:—For the past few years she has noticed an enlargement in her neck, which has given her a sensation of fullness, and has troubled her some in swallowing. During this time she has become very nervous, somewhat irritable, and has been subject to fainting spells. Her sleep has been poor because she says she has become so nervous that she cannot sleep. She also complains of the palms of her hands and her eyebrows perspiring very frequently.

Examination showed an enlargement of the right lobe of the thyroid gland, noticeable exophthalmos, tremor of the hands and lids, extreme nervousness, and a pulse rate of 120.

Operation. Partial thyroidectomy, the right lobe being excised on February 1st, 1914, skin

wound closed by subcutaneous stitches. Following the operation the skin wound healed by first intention. The pulse rate increased in rapidity for the first two days, going up to 138, then it gradually decreased in rate, being 90 when she left the hospital on February 12, 1914, her nervousness lessened and she slept normally about all night. 14 days in hospital.

Patient reports May 2nd, three months after operation, she has gained 16 pounds in weight, pulse rate 74, nervous symptoms entirely disappeared, has been working as a dressmaker one month. Her general condition is much better than in many years.

Case V. Mrs. H. J., age 27 years, housewife, was admitted to the hospital on March 23, 1914, and gave the following history:—For about five years she has noticed a growth in her neck. This was about the size of an egg when she first noticed it, and its size has now increased to that of an orange of moderate size. During this time she has been pregnant twice and bore two children, who are now alive and healthy. The growth of the enlargement and the symptoms accompanying it were not influenced in any way by the complicating pregnancies. At first the bunch was the only noticeable thing, but this was soon followed by increasing nervousness, impaired eyesight and exophthalmos, cold sweating of the palms of the hands.

Two years ago she had an operation, her lacerations were repaired and the abdominal operation done through a median incision. Since then she has not menstruated.

Examination showed an enlargement of the right lobe of the thyroid gland, very marked exophthalmos, extreme nervousness, palms of the hands very moist, tremors of hands and eyelids very marked, lids would not cover eye, pulse varying from 148 to 164.

Operation, excision of right lobe of thyroid gland, wound closed with subcutaneous stitch. The wound healed by first intention, the pulse rate decreased to 80 to 100 on her dismissal from the hospital, her nervousness became less, her tremor less marked, but her exophthalmos showed no change.

Things worthy of note in these five cases:

1. In all the right lobe was enlarged. Four—one left lobe.
2. In all the pulse rate decreased after the operation.
3. In all there was very little bleeding, and the wound healed by first intention. Operator should have no fear of blood; almost no scar.

4. In case No. 5, the growth was uninfluenced by two pregnancies.

5. In all the enlargement was gradual and the symptoms increased in severity proportionately with the growth of the gland.

Four of the cases were in a critical condition. All four were restored to health.

PROCIDENTIA UTERI; ITS CAUSES AND TREATMENT.

BY

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The term procidentia uteri in its exact application includes only those extreme cases where, the uterus having become retroverted until its long axis has become identical with that of the vaginal canal has descended, passes through the vagina completely, and remains suspended ex-corpore by the elongated round, broad, and utero-sacral ligaments and by the inverted vagina together with that portion of the bladder, and rectum involved in the descent or rather eversion of the vagina.

For the purposes of the present consideration we shall include those cases of prolapse of the second degree where the cervix uteri lies at or below the vaginal orifice.

Etiological Considerations.—There are many factors that enter into the causation of procidentia. Perhaps the relative importance of those factors would lead to the following arrangement or sequence. Between its normal, anteverted position in the pelvis, where its long axis makes an acute angle with the long axis of the vagina, and its extra pelvic position of extreme prolapse the uterus does two separate and distinct things.

First it rotates on its transverse axis from its normal position with its fundus toward the symphysis pubis, and its cervix pointing toward the sacrum, into a position where its long axis is vertical or behind the vertical, and second, it passes downward through the vaginal canal until it becomes partially, and then completely extrapelvic. Hence it follows that the causes naturally arrange themselves under these two heads.

Causes of backward rotation.—1. An over-distended bladder lifting the fundus upward and backward.

2. An over-full rectum pushing the cervix forward.

3. Straining, which forces the intestines into an over-enlarging serous pouch, bounded on either side by the anterior layer of the broad ligament, limited above by the round ligaments, in front by parietal peritoneum behind the symphysis pubis, and behind by the anterior wall of the uterus. This pouch, like the so-called cavity of the uterus, the canal of the vagina, the peritoneal and pericardial sacs, etc., etc., is in health a potential pouch only, and contains no intestine or abdominal or pelvic viscus. But its frequent distension from above downward converts in due course of time the potentiality into an actuality. The antero-uterine ligaments become elongated from oft repeated stretching, and the uterus has been moved from its antero position to a position somewhat between the antero and retro positions, with visceral contents occupying the anterior pouch in front of it.

4. In this position it is subject to the full depressing effect of the intra-abdominal pressure—a pressure which is being doubled and redoubled by such frequently recurring causes as, straining at stool, coughing, sneezing, clearing the throat, blowing, sudden physical effort, like lifting or jumping, a few hurried steps, etc., etc.—all of which are preceded by a full inhalation, a closure of the glottis, and a sudden contraction of those muscles, which can decrease the size of the abdominal cavity; that is the diaphragm, the oblique and transverse muscles of the abdomen, the quadrati lumborum, the psoas, and iliacus muscles, and last and very important, the levatores filling in the lozenge shaped space between the coccyx behind, the pubic symphysis in front, and bounded on either side by pubic, and ischiatic rami, the ischii, and the great sacro-ischiatic ligaments and fasciae. These last named muscles (levatores ani) form the floor of the abdominal cavity, and receive the impact of the descending viscera when impelled by the special muscular efforts alluded to above in defecation, coughing, sneezing, etc. The severity of the strain over the levatores ani will be in direct proportion to the magnitude of the muscular efforts made, and to the frequency with which

they are repeated. Hence it follows that frequently recurring cold, asthma, hay-fever, and tuberculosis, affecting the nasal, faucial, pharyngeal, laryngeal, tracheal, or bronchial tracts become in the female potent factors in the causation of descensus uteri. In accomplishing this result they act in two ways:—First, as the genesis of the visceral impact on the levatores ani, and second, by their debilitating effect they lower the tone of the muscles, and diminish their efficiency. The levatores ani constituting as they do a pelvic diaphragm, would be more capable of retaining the pelvic contents were it not for the openings in the median line for the urethra, the vagina, and the rectum. The urethral opening is so small that it may be disregarded; the rectal opening is so safeguarded by powerful sphincters, the spiral valvular arrangement of its mucous lining, the meso-support, and its intimate relation with the strong muscular fibres of the levatores ani. The vaginal opening is less securely guarded, although the anterior vaginal wall superimposed upon the long posterior vaginal wall offers considerable resistance, but it is rendered more particularly secure by the very anterior position of the introitus vaginae, this bringing it out of the line of impact of the abdominal viscera. Here two conditions must be considered, either of which may be a factor in predisposing to descent of the uterus. First, the angle which the plane of the brim of the true pelvis makes with the vertical line through the centre of the body, and second, the conformation of the cervix uteri. First. If the lumbo-sacral curve of the spinal column be well marked it will throw the plane of the pelvic brim almost into a vertical position, or, at all events, it will make with the vertical line anteriorly, a very wide obtuse angle. The impact of the intestinal contents will be against the inner concave surface of the pubic bones whence it will be deflected downward and backwards, tending to retroversion in the uterus rather than to descent. The other pelvis with its brim almost horizontal receives the full impact of intra-abdominal pressure along its median axis. The uterus undisplaced in such a pelvis is nearer the vertical axis. It requires but slight displacement therefore to bring it into the middle of the pelvis, where the intra-abdominal force from above will have the maximum effect in bringing it into the vagina, and towards the vaginal out-

let. This almost vertical pelvic brim is of greatest value in preventing visceroptoses, as it throws the viscera forward, where they are supported by a series of transverse shelves, the lowest formed by the pubic bones, the others by transverse bands of thickened serosa in the parietal peritoneum of the abdominal wall. Second. The shape or conformation of the cervix. If, in spite of all these unfavorable conditions the cervix is of the short, blunt-nosed type it will only with difficulty be forced towards the vaginal outlet. If, on the other hand it be long, slender, pointed, and anteflexed, it will serve as a guide to the impinging uterus, facilitating its descent, if not actually coaxing it onward over the re-enforcing perineum. It will be seen from what has already been said, that the alignment of the vaginal and uterine axes in the mechanism of descensus uteri is an absolute sine qua non. From the discussion of this subject up to this point it might be supposed that the change in the angle between the axes of the uterus and vagina, was brought about by change in the direction of the uterine axis alone. Such, however, is not the fact. The normal vagina extends backward and upward, from a point immediately below the symphysis pubis, separated from it by the urethral orifice, the clitoris, and surrounding tissues. Its lower end is fixed, but its upper end is not, but moves with the cervix to which it is firmly fixed. Hence the forward displacement of the cervix involves the forward displacement of the upper end of the vaginal axis. Our considerations, up to this point are applicable to parous and nulliparous alike. We must now consider the effects of the various changes, and accidents incidental to pregnancy, labor, and the puerperium. Concerning those hyperplastic changes which occur in the uterus and its ligaments, the vagina, and vulva, one need not pause here to speak, save to remark that involution, post-partum is not confined to the uterus alone, but must occur in uterine ligaments, vulva, and vagina as well, otherwise the uterus cannot ascend to its natural position and be retained there, and the vagina cannot become that closed, potential tube which it normally is. The changes and accidents of labor which are directly conducive to uterine prolapse are stretching of the vaginal opening through the pelvic diaphragm, stretching of the vagina itself, and enlargement of its orifice.

This stretching, even though no actual lacerations occur, tends to move the upper end of the vagina forward, and the lower end backward, just as a large hernia will draw the inner ring downward and outward, the outer ring upward and outward until one overlies the other, and the inguinal canal ceases to exist as such. It should be emphasized that this change of relations, and change of the direction of the vaginal canal can, and do occur even though there be no apparent lacerations of vagina or perineum. When, however, the perineum is torn, the outlet of the vagina is moved backward towards the anus, the once horizontal vagina becomes a vertical passage, and the alignment of vaginal and uterine axes is complete. If, now anything occurs during puerperium which arrests the involution of vagina, uterus, and uterine ligaments, all the conditions are present to secure more or less complete uterine descent. The heavy uterus, lax ligaments, the separation of levatores ani muscles, the alignment of uterine and vaginal axes, and the weakened perineum conduce to this result. To those conditions may be added the downward traction of cicatrices resulting from vaginal tears—large abdominal or pelvic tumors—or accumulation of fluid, and marked enlargement of the cervix may result in uterine prolapse of varying degree.

Having discussed at some length the causes which lead to procidentia uteri, let us consider those means available for its relief. Naturally the treatment would be best considered under the following heads:

1. Prophylaxis.
2. Palliation.
3. Cure.

After what has been said of the etiology of procidentia uteri, it will be self-evident that the prophylaxis of this, and other malpositions of the uterus should begin in infancy. The little girl must be taught the evil of over-distension of the bladder and rectum. Systematic and satisfactory evacuation of these organs should be early taught, and its importance insisted upon. No more important lesson than this can be taught in childhood, and it should be early inculcated. Upon the parents and physician, the early examination and care of the nostrils, the naso-pharynx, the fauces, the larynx, and bronchial tubes devolve. Are there a nasal polypi? hypertrophied turbinates? A deviated

septum? Excess of adenoid tissue in the naso-pharynx? hypertrophied pathologic faucial tonsils? Chronic irritation of the larynx or bronchi? Is there hay-fever or asthma? If any one or more of these conditions be present it should have radical, and efficient treatment in order that the frequent coughing, sneezing, and irritation which accompany them may be happily avoided, and their dislocating effects on the pelvic viscera obviated. Proper clothing, properly suspended from the shoulder should be insisted upon. Who has not seen the school girl with heavy petticoat and skirt, suspended by strings made of some inelastic material firmly surrounding the waist? I have seen a young girl with five or six inelastic cotton strings, each one encircling the waist twice, come to my office complaining of menstrual and pelvic trouble, when expansion of the waist was absolutely impossible. This unyielding girdle was still further immobilized by an ill-fitting, steel-braced corset. If the public press, self-constituted censor of public morality that it is, would concern itself less about the "slit skirt" and more about the inexpandible deforming waist girdle which the mothers of our young girls seem to think proper and indispensable, much greater good to individuals and humanity would result. Properly made clothing of proper weight, and properly suspended is a matter of vital importance to growing girls. Here too one may very properly protest against another evil which seems to be inseparable from the modern system of co-education in our public and high schools. No one desires to take issue with Harry Lauder when he sweetly sings:

"Every laddie has a lassie whether she be dark or fair."

The truth of this dictum is absolute, nor does one wish that it were otherwise. One recognizes the justice of that contention enunciated in the preamble of the American Declaration of Independence, viz.: that "The pursuit of human happiness is the inalienable right of every individual." Nevertheless, after fifteen years of clinical observation and experience one is firmly convinced of the opinion that the laddies ought to be morally clean and professionally competent, and the lassies at least twenty, and better still, twenty-five years of age. What do we see in our schools? Attractive young Juliets, 11, 12, and 13 years of age, each with her Romeo; walk-

ing to school with him arm in arm in the morning; strolling with him during intermissions; exchanging with him amorous glances during hours of recitation; accompanying him to class dances and class rides. One would not impute to these girls any moral depravity, but one would contend that it would be better for both the ladies and lassies if these intimacies were postponed for 10 years. These attentions to females on the part of males are the stimuli which biological laws, fixed and irrevocable, have ordained, to produce certain physiological excitations and congestions in the ovaries, the uterus, the vagina, and vulva of the female. That these frequently recurring congestions result in a measure in enlargements and displacements of the uterus, cystic enlargement of ovaries, and those frequent and distressing menstrual disorders for which one is so often consulted, seems more than probable. What is our experience in opening up a large number of abdomens in young women? Enlarged cystic, ovaries, and mal-locations of the uterus, the rule; normal ovaries, and normal uteri, the exception. Here then seems ground for a reform movement of undoubted prophylactic value for our growing girls.

Passing on to the consideration of pregnancy, labor and the puerperium, in their relation to proidentia, the burden of prophylaxis falls upon the accoucheur. Intelligent care during these periods by the competent, trained obstetrician is the best safeguard against disaster. Extremely difficult or impossible deliveries should be early recognized and hysterectomy substituted for destructive, death-dealing high forceps operations.

More life would be thus saved, and many a woman would be spared a life of invalidism. Good repair of perineum and cervix are today the rule rather than the exception in obstetric practice. A proper amount of rest in bed, post-partum, I believe to be desirable for the quickest and best involution of the vulva, the vagina, the uterus, and uterine adnexia. I have no sympathy with those who allow their patients to be up and about 3 or 4 days after child-birth. The dorsal position and very tight bandaging, I believe to be not only useless, but harmful, as both tend to produce backward displacement of the uterus.

Palliative treatment.—This condition (proidentia uteri) is frequently met with in the aged when operation would be considered ex-

tra hazardous. Younger women so afflicted frequently refuse operation. These patients by tucking a large pledget of gauze into the vagina, and wearing a tight napkin or T-bandage manage to get along with more or less discomfort. Various forms of pessaries may be used, but the difficulty of retaining them makes their use more or less unsatisfactory. The cup and stem pessary with external support will retain the uterus in some cases, but is always uncomfortable.

Operative treatment.—Where there are no serious contraindications to operation, and the patient gives her consent, this is the most rational way of dealing with these very distressing cases. At the outset it may be stated as absolute and incontrovertible, that no procedure which does not secure anatomical restoration of the floor of the pelvic cavity can or ever does remedy this condition. All fixations and suspensions, save perhaps one suggested and practiced by Dr. Murphy of Chicago, while they may keep the uterus in the pelvis for a while, must ultimately fail of this object. And again, though they may keep the uterus within the body they do not cure the attendant cystocele and rectocele, with their trains of symptoms, and these by the way are the symptoms from which the patient usually seeks relief. In approaching these cases the operator must consider them in their true light, viz.:—as a hernia, through the bottom or floor of the abdominal cavity, and their cure entails just what the cure of any other hernia does.

First, a return of the viscus or viscera to the abdominal cavity, and second, the repair or obliteration of the way through which they made their escape from their normal place. There are in vogue at the present time two satisfactory methods of obtaining these ends.

1. The so-called interposition operation (Watkins, Wertheimer). In this operation the cervix is amputated so as to present a square end for abutment against the posterior vaginal wall, and a shortened cervix to prevent rectal pressure from having a leverage on the body of the uterus tending to retrovert it. The anterior vaginal wall is then dissected up from the uterus, the bladder being carefully pushed upward out of the way. For this purpose a vertical incision from a point half an inch below the meatus urinarius is made to the transverse amputation incision in front. When the peritoneum is reached at the bottom of the serous pouch in

front of the body of the uterus it is opened and the opening dilated laterally by the fingers. The fundus is seized, and anteverted through this opening. The redundant flaps of the anterior vaginal wall are cut away as much as may be necessary and sewed together along the median line of sutures, including good firm bites of the anterior surface of the uterus. The perineum is then reconstructed and the operation is complete. This procedure though it takes considerable time is well borne and is followed by no shock. It relieves conditions and symptoms most satisfactorily. In my opinion only two valid objections have been urged against this operation.

1st. The possibility of pregnancy and,

2nd. The possibility of uterine cancer.

To the first objection one might reply that in these cases pregnancy must be precluded by selecting cases after menopause, or by taking such measures during the operation (of course with the patient's consent) as will render fecundation impossible. To the second one might say that the amputation of the cervix would greatly reduce the probability of cancer of the uterus inasmuch as by far the greatest number of such, begin in the cervix. However, should it unfortunately occur, hysterectomy would be difficult, but not impossible. The other operation is similar but more conservative. The cervix is amputated, the anterior vaginal wall is dissected up from the cervix uteri, care being taken not to injure the bladder and uterus. The bladder is pushed up, the redundant flaps of the anterior vaginal wall are cut away and then reunited, the stitches including the anterior surface of the uterus below the peritoneal reflection. The perineum is then built up, but unlike the previous operation this does not complete the work. It now becomes necessary to open up the abdomen and correct the position of the uterus by whatever means the operator may select. In favor of this operation it is urged that it gives an opportunity of remedying pathological conditions in the pelvis. In defense of the first operation one might say that in it this opportunity is not wanting, and that the operation is immediately less serious than the second. Of course the presence of pathological conditions in the pelvis if not actually determined by examination before operation would at least be suspected, and this would lead one to adopt the second operation

rather than the first. In some cases a vaginal hysterectomy with perineal repair may seem to best meet the needs of the case. In a number of cases in which I have done this the results have been all that could be desired, but in two cases it failed entirely to relieve the bladder symptoms. The cystocele persisted although the perineal repair was good. The patients were disappointed with the results and so was the operator. One of them is now able to retain a ring pessary which completely relieves her from urinary symptoms. This she could not do before. The other patient has gone out of my ken.

NEW HOUSES AND HEALTH.

New houses are constantly offered for rent in large numbers in the United States and real-estate agents are naturally anxious to fill the houses on their lists with tenants as soon as possible. Probably a little investigation would show the desirability in this country of requiring a certificate that a new house will not endanger the health of its occupants before families are allowed to move into it. Such municipal regulations are proving valuable in England. Toward the close of 1912 the Portsmouth (England) corporation decided that thereafter no new building intended for human habitation in that borough should be occupied until it had been certified as sanitary in every respect. Dr. A. Mearns Fraser says: "The principal evil that it will prevent is the occupation of houses before they have had time to dry." He adds: "I would far sooner live in a house with defective drainage than in a damp house; the results from the latter are more insidious in their onset and more difficult to overcome. Dampness undoubtedly greatly favors the incidence of consumption, bronchitis, rheumatism, heart disease and diphtheria. Probably children are more susceptible to the ill effects of damp houses than adults." The departments of health of our cities might well take up this question, says *The Journal of the American Medical Association*. Probably most American municipalities already have the legal power necessary to require such certificates and the question is only one of making the regulation and establishing the custom.

Vermont Medical Monthly.

A Journal of Review, Reform and Progress in the Medical Sciences.

H. C. TINKHAM, M. D., }
B. H. STONE, M. D., }*Editors.*

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EDITORIAL.

The annual course in Post-Graduate instruction, which is given by the University of Vermont College of Medicine, has finished the most successful session it has ever held. The week-end clinics, which were substituted this year for the continuous course previously given, has met with general favor as was demonstrated by the large increase in attendance. This plan makes it easier to arrange for clinical material as the interesting cases can be selected from the hospital service from week to week.

The clinics this year were especially interesting. Dr. Fred Albee of New York City, had cases to demonstrate his bone graft in the treatment of spinal curvature and fracture of the bones of the extremities, also a case to demonstrate his operation for deepening the acetabulum in congenital dislocation of the hip by increasing the size of the rim of the acetabulum instead of excavating a hole in the bone as has been advised.

Dr. Albee's work is simply the application of well known mechanical principles in the treatment of deformities, and with the special instruments he has devised, these operations are simple and easy to perform.

The lantern lecture, in which he gave X-ray illustrations of conditions one or two years after operation, was exceedingly interesting and fully demonstrated the correctness of Dr. Albee's ideas in regard to the treatment of these conditions.

Among the various medical cases shown perhaps treatment of pernicious anemia by the intravenous injection of neosalvarsan was the most interesting. It is surprising to see how many of these cases improve under this treatment.

A very interesting case in the surgical clinics was that of an infection of the lung with the larva of the sheep-fly. This patient coughed up pus containing the live maggots of the fly. The infection went on to involve the lung and pleura, necessitating drainage through the wall of the thorax.

A complete report of these clinics will be printed in the Journal.

It is especially interesting at this time to find that the free maternity ward at the Mary Fletcher hospital, has met the expectations of those who had to do with its establishment.

During the year nearly fifty cases have been treated, which is a much larger number than was expected by the most sanguine. With this splendid showing the first year it is only reasonable to believe that twice that number will take advantage of this free maternity service during the coming year.

It should be clearly borne in mind, however, that this service *does not* provide for the adoption of the child. Upon the payment of \$100.00 arrangements can be made with the Home for such adoption.

This free service is intended to provide the best of medical care for any maternity case needing gratuitous treatment.

The department of health of the City of New York has just published an analysis of its expenditures during the year 1913, which contains so much useful and interesting information that we are copying some part of it. An attempt to analyze the cost on a unit basis has been made with the idea of allowing comparisons and thus discouraging any extravagance and waste. The total expenditure of the department reaches the large total of \$3,338,282.96 or \$1.40 per indi-

vidual of the city's population. This expenditure is distributed as follows:—General administration, \$436,034.80; keeping records, \$64,955.47; child hygiene, \$637,181.49; contagious diseases, \$258,832.39; communicable diseases, \$367,085.13; inspection service, \$402,935.17; laboratory service, \$186,749.80; hospital service, \$984,508.71. These items are further divided so that a cost per unit is obtained as in the laboratory and hospital service which is here copied.

Laboratory Service:

Administration	\$135,616 65			
Chemical Laboratory	16,760 19	15,142	Analyses	1,106
Research and Vaccine Laboratory	25,882 09			
Drug Laboratory	8,490 87			

\$186,749 80

Hospital Service:

Willard Parker	\$221,773 04	90,560	Patient Days	2,448
Riverside	292,081 54	127,774	Patient Days	2,286
Kingston Avenue	192,064 31	74,105	Patient Days	2,591
Tuberculosis Sanatorium, Otisville, N. Y.....	278,589 82	185,745	Patient Days	1,499

\$984,508 71

NEWS ITEMS.

At the annual meeting of the Connecticut Valley Medical Association held in Bellows Falls, Vt., the following officers were elected:—President, Dr. A. I. Miller, of Brattleboro, Vt.; vice-president, Dr. J. E. Toye, of Charlestown, N. H.; secretary and treasurer, Dr. Ira H. Prouty, of Bellows Falls.

The sixty-fifth annual session of the American Medical Association will be held at Atlantic City, N. J., June 22-26, 1914. No European resort is said to compare with this city in natural advantages. One of the show places of America, it is at the same time the finest health and pleasure resort in the world. Those who have been to Atlantic City always want to go again and those who have not are eager to see for themselves what constitutes the charm of this great meeting place. There are more than 100 large and 900 smaller hotels besides numerous boarding houses.

The Board of Health of New York City has issued rules governing bathing beaches. These rules require that all bathing apparel in public bath houses shall be sterilized every time after

they have been used and that water from wells at such resorts shall not be used for drinking purposes until analysis by the Board of Health shows that it is free from danger of contagion.

A communication in the February number of the *Southern Medical Journal* urges the Southern Medical Association to appoint "a commission for the study of prevention and eradication of venereal disease in the southern states." The writer says:—"With yellow fever disposed of, malaria, uncinariasis and pellegra receiving competent attention, can we not devote some effort to the control and eradication of the greatest scourge of all—venereal disease? "The venereal disease is not peculiar to the south, nor does it prevail more extensively there than elsewhere, but this does not lessen our duty or lighten our burden. Racial and economic conditions make it a special problem for us, and we must accept it for our own protection. The extent of the ramifications has never been investigated, no survey made, or effort to control its spread. A filthy, polluted body endangers the innocent, pelvic operations destroy posterity, blind asylums are expensive, and insane hospitals mark the nation's decay; and all these are increasing, yet nothing is being done to stay the tide." (*Am. Med. Journal of Public Health*, 4-1914).

A felon caused by an accidental bruise upon the finger of a holder of an accident insurance policy is held in the Vermont case of *Robinson vs. Masonic Protective Asso.* 47 L. R. A. (N. S.) 924, to be within the clause of the policy providing compensation for accidental injury resulting from some violent, external and involuntary cause leaving external and visible marks of a wound. This appears to be a pioneer case upon the question.

Dr. Joseph E. A. Lananette died May 16th, in Manchester, N. H. He was 64 years of age and had practiced in Manchester since 1881.

Dr. Charles E. Chandler of Montpelier is recovering nicely from a slight attack of acute indigestion. He is sitting up but not able to get out as yet. Dr. M. F. McGuire is the attending physician.

Dr. William Meller, Baltimore Medical College, 1912, has located in Manchester, N. H.

Dr. E. F. Jones, formerly of Hinesburg has given up his practice there and left the last of May for California where he intends to locate.

Dr. and Mrs. John M. Wheeler of New York City (both former Burlingtonians) are the parents of a son, Charles Smith Wheeler, born June 3.

The fifth annual session of the Clinical Congress of Surgeons of North America, will occur in London, England, week of July 27, 1914.

The forty-fifth annual meeting of the American Medical Editors' Association will be held at the Marlboro-Blenheim Hotel, Atlantic City, N. J., June 22nd, 1914, 9 A. M. sharp.

Officers, 1913-1914: Dr. E. A. Van Der Veer, Pres., Albany, N. Y.; Dr. H. Edwin Lewis, 1st Vice-Pres., New York City; Dr. S. Harris, 2nd Vice-Pres., Mobile, Ala.; Dr. Joseph MacDonald, Jr., Secy. and Treas., New York City.

Executive Committee: Dr. C. F. Taylor, Chairman, Philadelphia, Pa.; Dr. D. O. English, New Brunswick, N. J.; Dr. W. C. Abbott, Chicago, Ill.

Publication Committee: Dr. H. Edwin Lewis, Chairman, New York City; Dr. Charles W. Fas-

sett, St. Joseph, Mo.; Dr. A. S. Burdick, Chicago, Ill.; Dr. J. P. Warbasse, Brooklyn, N. Y.; Dr. Joseph MacDonald, Jr., New York City.

Banquet, Tuesday evening, Marlboro-Blenheim Hotel, 7 P. M. sharp. Secure tickets from the Secretary.

Literary programme: President's address, E. A. Van Der Veer, M. D., Albany, N. Y.; "Relation of the Medical Press to the Cancer Problem," by Fred'k L. Hoffman, Statistician of the Prudential Ins. Co., Newark, N. J., (by invitation); "The Things that Count in Medical Practice," by H. Edwin Lewis, M. D., New York City; "Ideal National Medical Journal: What It Should Be and What It Should Not Be," by W. J. Robinson, M. D., New York City; "Two Problems of the Organization Journal: The Mediocre Paper and the Editorial Department," by Sarah M. Hobson, M. D., Chicago, Ill.; "Medical Journalism as a Local and as a National Proposition," by Thomas S. Blair, M. D., Harrisburg, Pa.; "Medical Books and Journals," by T. D. Crothers, M. D., Hartford, Conn.; "The Medical Periodical and the Scientific Society," by F. H. Garrison, M. D., Washington, D. C.; "Editorial Experiences," by A. L. Benedict, M. D., Buffalo, N. Y.; "The Special Medical Journal," by A. Bassler, M. D., New York City; "The Medical Profession and Its Influence from a Buying Standpoint," by Joseph MacDonald, Jr., M. D., New York City; "The Preparation of the Original Article and the Editors' Latitude," by E. Franklin Smith, M. D., New York City; "Medical Publicity in the Lay Press," by Chas. E. Woodruff, M. D., N. Y., Lieut. Col., retired, U. S. A.; "He, Who Is Without Sin Among You, Let Him First Cast a Stone," by Erwin Reissmann, M. D., Newark, N. J.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

The 1914 Clinical Congress of Surgeons of North America will soon be in session. The last of July will find a notable gathering of surgeons and surgical specialists in London to witness the British surgeons as they exhibit their surgical skill in their accustomed environment and in their own institutions. The wonderful

interest that has been engendered in these Congresses in Chicago, Philadelphia, and New York on the part of American surgeons will be greatly heightened when they have the opportunity to stand shoulder to shoulder with their English and Continental Confrères and observe the London clinical methods. In a few years this idea of holding a clinical meeting has revolutionized the conduct of medical societies in America, and it now remains to be demonstrated whether or not the same idea will meet with similar approval by the surgeons of England.

During the days of the Congress the clinics by eminent London surgeons will be observed by many visitors from America, Canada, the Continent, and the Provinces. At the evening sessions the scene will be changed, when the celebrated surgeons of the Continent, America, Canada, and the Provinces will reciprocate by furnishing the scientific entertainment to the members of the Congress and to the London surgeons, delivering messages on the live surgical questions of the day.

A review of the Clinical Program, printed on the following pages, gives but a fair idea of the great interest that is being taken in this session of the Congress by the London surgeons. The work of organization is progressing rapidly and by the time the Congress is opened a considerable portion of the clinical facilities of London will be available to the visiting surgeons.

The program for the Evening Sessions, as printed in this issue, gives only a tentative outline of the wealth of interesting material that will be presented by the visiting surgeons and briefly discussed by the London surgeons.

LONDON AS A POST-GRADUATE CENTER.

London is a great post-graduate center in medical instruction and training, and no doubt many of the younger visiting surgeons upon discovering the advantages to be gained by attending the London clinics will take this occasion to make arrangements for more formal and prolonged courses, either in the immediate future or later.

HEADQUARTERS OF THE CONGRESS.

The headquarters of the Congress are ideal. The embankment suites of entertainment halls of the capacious Hotels Cecil and Savoy, located

side by side in the hospital center of London, have been secured for the registration rooms, exhibition halls, and evening meeting rooms. These great hostelries, with their combined capacity for more than fifteen hundred guests, are located within a stone's throw of many of the other famous hotels of London.

Surgeons on reaching London should proceed at once to headquarters, register, and receive their membership cards and tickets which will admit them to the evening meetings and to the clinics. The registration fee is five dollars, or twenty-one shillings.

Those who prefer to do so may register in advance and receive their credentials, by sending the amount of the fee to the General Secretary, Clinical Congress of Surgeons, 30 North Michigan Avenue, Chicago, before July 1st; after which time remittance should be sent to the London office of the Congress, No. 1 Wimpole St., London, W. England.

BULLETIN ROOMS.

At the Hotel Cecil will be bulletined the clinics in General Surgery, Gynecology and Obstetrics, Genito-Urinary Surgery, Orthopedics, X-ray and Laboratory Demonstrations; at the Savoy, the clinics and demonstrations in Surgery of the Eye, Ear, Nose and Throat. The program for Monday, July 27th, will be bulletined on Saturday afternoon, July 25th, two days before the opening of the Congress, and on the afternoon of each day of the session a complete, accurate program of the clinics and demonstrations to be given on the succeeding day will be posted on the bulletin board. The registration and bulletin rooms will also be open on Sunday, July 26th, for the accommodation of early arrivals.

MEMBERSHIP IN THE CONGRESS.

Any physician or surgeon legally qualified to practice surgery in his community may become a member of the Clinical Congress by registering at any annual meeting and paying the registration fee.

Automatically the subscribers to *Surgery, Gynecology and Obstetrics*, the official journal of the Congress, will receive invitations without request. Other members of the profession who desire to attend will receive formal invitations

upon request to Franklin H. Martin, M. D., General Secretary, 30 North Michigan Avenue, Chicago, or to No. 1 Wimpole St., London, W.

REGISTRATION FEE—ADVANCE REGISTRATION.

A registration fee is required of each surgeon upon registration, at which time a membership card will be issued as stated above. North American surgeons who wish credentials to enable them to secure reduced steamship rates may register in advance and receive certificate of membership. The registration fee of five dollars should be sent to the General Secretary, 30 N. Michigan Avenue, Chicago, *before July 1st*, or to No. 1 Wimpole St., London, W. *after July 1st*.

Unlike conditions prevailing in most medical societies, where annual dues are paid by each member without regard to his attendance at any meeting of the society, the payment of a registration fee is required of a member of the Congress only when he is in attendance at an annual session.

The purpose of this fee is to provide funds to meet the expenses of preparing for and conducting the annual meeting, in order that no financial burden other than the registration fee may be imposed upon the members of the profession in the city entertaining the Congress. Judging from past experience, the amount received from such fees will be barely sufficient for the purpose, so that payment of the fee is expected of all who attend the clinics or evening sessions.

RESERVED TICKETS FOR CLINICS.

Reserved tickets for all clinics and demonstrations, properly numbered and couponed, corresponding to the capacity of each operating room, will be issued, and booths will be established at headquarters where these tickets may be secured.

A tentative program will be furnished about July 1st to all prospective attendants of the Congress who apply for the same. The program will be printed in *Surgery, Gynecology and Obstetrics*, the official journal of the Congress, and in other medical journals. From this program one may make his selection of the clinics he wishes to attend and send a written request for reserved tickets to Mr. A. D. Ballou, General Manager, No. 1 Wimpole St., London, W., stating definitely

for just what clinics the tickets are desired. These tickets will be retained at headquarters up to a certain fixed time (to be determined and announced later) in the name of the applicant, and will be assigned as nearly as possible in order of application. That the applicants may not be disappointed if the tickets for their first choice are exhausted, several selections should be made.

MEMBERSHIP CARDS.

Each surgeon who desires to attend the clinics and evening sessions must register at headquarters and secure a membership card. Admission to all clinics and evening sessions will be limited strictly to members of the Congress upon presentation of such membership cards.

THE EVENING MEETINGS.

Evening meetings will be held simultaneously in two halls; the general surgical program to be given in the Grand Hall of the Hotel Cecil and the program of the specialties, Surgery of the Eye, Ear, Nose and Throat, and Oral Surgery in the Ballroom of the Hotel Savoy.

The meetings will begin at 8.30 o'clock and adjourn not later than 11.45. The principal papers are to be read by visiting surgeons and a time limit of twenty-five minutes has been fixed for each address. The papers are to be discussed by London surgeons and the discussions limited to ten minutes each.

ENTERTAINMENTS.

It has been the policy of the Clinical Congress of Surgeons to discourage large entertainments of a social nature. The time is so carefully arranged and occupied by scientific meetings and clinics that there is no proper time for social functions. Then, too, the Congress of necessity must always be held in large cities where there is much of general interest in the way of theaters, museums, and art galleries, which affords entertainment for those seeking occasional recreation and for the accompanying ladies. This plan has worked out so well in other cities where sessions of the Congress have been held that it is hoped the same policy will be observed in London. It must be remembered that the burden to the profession or a municipality of

entertaining large medical societies in recent years has become so great as to be almost prohibitive.

SAILING ACCOMMODATIONS AVAILABLE.

It is urged that accommodations for going and return passage be arranged for at the earliest possible date. The Transportation Manager of the Congress is in a position to obtain excellent accommodations on any of the leading steamship lines at rates that will suit the financial requirements of the inquirer. Reservations can be made on some of the late sailing fast steamers, whereby a surgeon may attend the Congress and return with the loss of but three weeks' time. For the convenience of those who have not yet arranged their sailing dates a list of the steamers and their sailing dates going and returning is given on pages xlvi and xlvii of the advertising department of this journal.

Members of the Congress are advised to make their sailing reservations direct through Mr. J. P. McCann, as he is in position to make the best choice of accommodations on any of the lines and to give all information about the reduction in rates and on any other points. Address all communications on transportation to Mr. J. P. McCann, Transportation Manager, Marbridge Building, New York City.

SPECIAL RATES.

A special reduction of 25 per cent. to members of the Clinical Congress and their immediate families is being made by the International Mercantile Marine, which includes the White Star, Atlantic Transport, American Line, and Red Star Line, for passage to London after July 9th, with the exception of the S. S. "Oceanic," July 4th, for which they will grant the reduction; and on other lines after July 15th, with the exception of the Hamburg American Line, which will grant the reduction for the "Kaiserin Augusta Victoria," leaving on July 11th. The Cunard and Allan Lines are granting the same reduction on and after July 2d and returning until August 27th from Europe.

In all cases the minimum first class rate must be adhered to. Under no circumstances can the fare be less than the minimum rate. Further information and full particulars of all sailings

can be obtained from Mr. J. P. McCann, Transportation Manager, Marbridge Building, Broadway at 34th Street, New York.

LONDON HOTELS.

In addition to the Cecil and Savoy, the Headquarters of the Congress, there are a large number of hotels centrally located which have agreed to make advance reservations for members of the Congress. These hotels include, among others, the Carlton, Metropole, Grand, Victoria, Grosvenor, Imperial, Russell, Waldorf, Ritz, Piccadilly, Great Central, First Avenue, Richelieu, St. Ermins, Hans Crescent, Windsor, Langham, Royal Palace, and deKeyzers Royal.

While there will be no difficulty in securing hotel accommodations somewhere in London during the week of the Congress, it is advisable to make reservations early.

SURGEONS' INTERNATIONAL GOLF MATCH.

Notice.—It is proposed to arrange a golf match between teams representing London surgeons and North America surgeons, on one afternoon during the week of the Congress. Arrangements will be made for the matches to take place at seven or eight of the numerous courses around London. In this way it will be possible to arrange for 50 or 100 couples to take part without crowding, as the number of couples playing on the same course will be limited to ten or twelve.

Members of the Congress who desire to play are requested to send their names and handicap to Mr. Herbert Paterson, at the London office of the Congress, 1 Wimpole St., W.

BOOK REVIEWS.

A TEXT-BOOK OF PHYSIOLOGY: FOR MEDICAL STUDENTS AND PHYSICIANS.—By William H. Howell, Ph. D., Professor of Physiology, Johns Hopkins University, Baltimore. Fifth Edition Thoroughly Revised. Octavo of 1,020 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$4.00 net; Half Morocco, \$5.50 net.

In the fifth edition of this standard, the author has added material needed to keep abreast of current investigation in physiology. Much new material has been added to the subject of metab-

olism. The volume as it stands is a very complete, up-to-date and comprehensive work on the subject of physiology.

DORLAND'S AMERICAN ILLUSTRATED MEDICAL DICTIONARY.—A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Seventh Revised Edition. Edited by W. A. Newman Dorland, M. D. Large octavo of 1107 pages, with 331 illustrations, 119 in colors. Containing over 5,000 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1913. Flexible leather, \$4.50 net; thumb indexed, \$5.00 net.

The phenomenal development on pathology, serology, physiology, chemistry and experimental medicine makes necessary the frequent revision of a complete medical dictionary. Over 5,000 new terms have been defined. The book keeps the general arrangement and binding which have been so popular in the past.

THE PRACTICE OF PEDIATRICS.—By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

This new work in the field of pediatrics was written in response to the cordial reception of the previous smaller work of the author on "The Treatment of Diseases of Children." A large section (125 pages) is devoted to the all important subject of infant feeding. Then the various disease conditions which are likely to afflict the infant are treated and finally therapeutic measures, gymnastic therapeutics, drugs and drug dosage are discussed.

MATERIA MEDICA. PHARMACOLOGY. THERAPEUTICS AND PRESCRIPTION WRITING.—For Student and Practitioners.—By Walter A. Bastedo, Ph. G., M. D., Associate in Pharmacology and Therapeutics at Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.50 net.

This book is an adaptation of lectures delivered at Columbia University. Most stress is properly laid upon these things that bear upon

practice. The author has not hesitated to condemn many drugs which have been relied upon for years but which critical laboratory study has shown to be useless. Especially full is the author's description of digitalis.

DIAGNOSIS IN THE OFFICE AND AT THE BEDSIDE.—The Use of Symptoms and Physical Signs in the Diagnosis of Diseases.—By Hobart Amory Hare, M. D., Professor of Therapeutics, *Materia Medica and Diagnosis* in the Jefferson Medical College of Philadelphia. New (7th) edition, thoroughly revised and rewritten. Octavo, 547 pages, with 164 engravings and 10 full-page plates. Cloth, \$4.00 net. Lea & Febiger, Philadelphia and New York, 1914.

This book is intended to be of great use to the practitioner in his office and bedside work where he elicits from the patient certain subjective symptoms and discovers certain physical signs and from these is forced to make his diagnosis. Therefore, the author instead of describing a disease in the older classic manner considers new prominent symptoms and the condition which may give rise to these symptoms. This method which is not original with the author is justly popular with the practitioner and the clear, logical and accurate style of the author is too well known to need comment. The fact that this is the seventh edition of the book is evidence enough of its popularity.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MOVABLE SPLEEN.

R. S. FOWLER, Brooklyn (*Journal A. M. A.*, January 17), says that within a few years he has noted the mobility of the spleen in many laparotomies not involving septic processes. The normal spleen is but slightly mobile, its normal excursion not exceeding 1½ inch. Abnormal mobility may be, (a) congenital, owing to a long mesentery; or (b) acquired, owing to elongation of the normal mesentery and suspensory folds, (1) from strain with or without relaxation of the abdominal walls (in the former event repeated confinements play the same rôle as in movable kidney), or (2) from traction on the mesentery by increase of weight of the organ (hyperplasia, cysts, tumors). Increase of size, however, does not necessarily mean increase of mobility. Excessive mobility of the unenlarged spleen is rare. Fowler has seen but one case in over thirty years' hospital practice. The mobility of enlarged spleen is not often excessive. Torsion of the pedicle is sometimes followed by atrophy, sometimes by gangrene. The

diagnosis is not difficult, but owing to the rarity of the condition mistakes are common. The spleen may be found in any part of the abdomen unless it becomes adherent. It is most commonly mistaken for a floating kidney but the characteristic notch corrects this diagnosis. In some cases, cystoscopic examination may be required. There are no blood-changes unless malaria is a complication or torsion has occurred. Fowler does not favor splenectomy for the condition, but thinks splenectomy more advisable. Excision of the organ causes slight if any changes in the blood-picture and the mortality of the operation is not high. The prognosis is good; relief of symptoms is immediate. A case is reported.

DEFENSIVE ACTION OF SPLEEN.

Recalling his former communication (*Journal A. M. A.*, Sept. 14, 1912, p. 674), in which he showed that the embryo, unlike the adult chicken, is vulnerable to grafts of foreign tissue, JAMES B. MURPHY, New York (*Journal A. M. A.*, January 17), gives an account of his experiments made to supply this defensive mechanism to the embryo by transplantation of organs. Chick embryos were inoculated simultaneously with a fragment of rapidly growing rat sarcoma and a bit of adult chicken tissue. Both implantations were made in the outer membrane in different locations. The results were striking. The various organs and tissues, with two exceptions, have no effect on the growth of foreign cells. The kidney can be grafted side by side with the rat sarcoma and both grow and intermingle together. When, however, the embryo was provided with a bit of adult chicken spleen its resistance to the sarcoma growth was as great as that of the adult. Moreover, if the spleen is supplied some days after the sarcoma has been growing in the embryo, the latter undergoes prompt retrogression. The adult bone marrow was found also to have some protective action but less than that of the spleen.

BOWEL OBSTRUCTION.

W. D. HAMAKER, Meadville, Pa. (*Journal A. M. A.*, January 17), reports a rather unique case of bowel obstruction in a woman aged 72. A laparotomy was performed which revealed Meckel's diverticulum gangrenous and strangled by the omentum, a rent in the upper part of the mesentery, through which all of the transverse colon as well as the omentum had passed, producing the obstruction. There were no adhesions, the colon was replaced and the diverticulum and part of the omentum were removed. The patient made a good recovery.

MECKEL'S DIVERTICULUM.

J. P. CROZER GRIFFITH, Philadelphia (*Journal A. M. A.*, May 23, 1914), reports a case of ulcerative inflammation of Meckel's diverticulum in which the combination of clinical manifestations and pathologic lesions was very unusual, unexpected and misleading. Persistent

slight hemorrhage from the bowel and severe anemia was present, accompanied by nephritis. The inflammation also extended to the serous layer of the diverticulum, producing a secondary, purulent peritonitis, localized by the matting of the coils of the ileum around the seat of suppuration. The origin and bearing of the nephritis was uncertain. He cites literature on Meckel's diverticulum and reports its occurrence with the types most frequently found.

1. Strangulation of the intestine by the diverticulum or its remains, usually attached to the umbilicus or to some part of the intestine, mesentery or other region. The diverticulum may be either in the form of a fibrous, cord-like remainder of the organ, or may have its lumen still present, through all or a part of its extent. In either case the ileum becomes constricted and strangulated.

2. The persistence of Meckel's diverticulum with an opening at the umbilicus, which is unusual, and the subjects are usually males.

3. Formation of a cystic tumor in which the diverticulum becomes obliterated at both ends.

4. With concretions of various sizes present in the diverticulum.

5. Superinvolution of the diverticulum which narrows the intestine and continues the obliterative process to the ileum.

6. With stenosis of the ileum caused by traction of the diverticulum attached at its distal end.

7. Invagination of the diverticulum, which is often followed by an ileocecal intussusception.

8. Volvulus of the diverticulum, or of the ileum, which occurs most frequently if the distal extremity of the diverticulum is attached.

9. Hernia of the diverticulum is seen occasionally.

10. Inflammation of the diverticulum, which is one of the most infrequent abdominal diseases. In secondary diverticulitis other lesions develop first in the primary diverticulitis a distinction is to be made between the acute and chronic cases and the relationship of diverticulitis to obstruction of the bowel. The causes of diverticulitis are obscure, though it is probably based on infection. Previous digestive disturbances and trauma have some bearing. Diverticulitis is analogous to and may coexist with appendicitis; all grades of inflammation and symptoms may exist. The condition has never been recognized during life, hence the frequency of re-

currence is unknown. Spontaneous recovery may take place, but the only practical treatment is operative. Whenever the diverticulum is discovered during operative procedures, it should be removed, as it always constitutes a menace.

FILARIAL LYMPHANGITIS SIMULATING BUBONIC PLAGUE.

I. GONZALEZ, San Juan, Porto Rico (*Journal A. M. A.*, May 3, 1914), reports an unusual case suspected of being bubonic plague. Careful observation of the symptoms and exploration of the painful zones in the groins determined that the diagnosis of plague was incorrect. The suspicions were justified, however, because the sudden appearance of painful glandular infarcts in the groin, accompanied by fever, delirium and stupor, is suspicious. In the general examination the pulse was found uncountable, the temperature exceeded 39.5 C. (103.1 F.), subsultus tendinum almost continuous, and quiet delirium gave evidence of the exhaustion of cerebral centers. "The sudden attack, the suggestive history of its progress during the preceding twenty-four hours and the suspicious syndrome presented, impressed on our minds the belief that we were facing a case of filarial lymphangitis." The suspicions were confirmed by independent examination by Drs. Gutierrez Igaravidez and Zavala. The investigation was thorough and complete because the etiology and pathogenic problems had exceptional importance from the sanitary point of view, as well as for that affecting the nosography of the country. The finding of an embryo of *Filaria bancrofti* in the urine examination confirmed the tentative clinical diagnosis, the blood examination also showing embryos of *Filaria nocturna*. At necropsy portions of the viscera and blood-smears from various fluids of the body were examined and showed a lack of any visible pathologic alterations, especially in the liver, spleen and lungs, thus dissipating the idea that the attack was one of bubonic plague, while it was definitely excluded by absence of Yersin's bacillus from the glandular fluids. According to the findings in the anatomico-pathologic examination, and the bacteriologic investigation, the only real cause of the death of the child that can be accepted is endemic pernicious lymphangitis of filarial

origin. "This is . . . important for the nosography of the country, because it shows the occurrence . . . of those grave and pernicious forms of tropical lymphangitis of filarial origin described by the Brazilian authors . . . as endemic lymphangitis, and by Mazaé-Azema . . . as in traganglionar lymphangitis. . . . It also proves that certain forms of filarial lymphangitis, without the assistance of other complicating microorganisms, may *per se* rapidly kill their host."

BRACHIAL PLEXUS ANESTHESIA.

Supraclavicular anesthetization, a method introduced by Kulenkampff, is described by H. NEUHOFF, New York (*Journal A. M. A.*, May 23, 1914). He reports a case showing a possible accident from this method, the only one heretofore reported and which attributed to intoxication of the novocain employed or to trauma of the brachial plexus. There were no serious after-effects and the patient was approximately normal in twenty-four hours. The area for injection is the space bounded internally by the subclavian artery and externally and below by the clavicle and in the depths by the upper surface of the first rib. Several guides for the introduction of the needle have been described, but there is no doubt that the subclavian artery should be the one employed, as there may be several variations in its course. The position of the artery having been absolutely determined, the needle is immediately introduced external to the vessel at a point directly above the clavicle. It is introduced slowly and is directed downward, forward and inward. The best guide, Neuhoof says, for the path of the needle is the spinous process of the second dorsal vertebra. The latter should be marked on the skin and the needle be pointed directly toward it. There is one clear indication that the needle is at the plexus; which is that paresthesias appear in the hand and arm, in the medial or radial distribution, or both, and nothing should be injected until they appear. If they appear in the medial distribution alone, the needle should be introduced a few millimeters deeper for the second half of the fluid, as the median is rather superficial at this point. The solution usually employed is 2 per cent. novocain, combined with epinephrin. The anesthesia of the arm is usually

complete enough for any operation, though it may be incomplete in about 15 per cent., or less, according to the experience of the operator. It has been used in about 50 cases successfully, but this is hardly sufficient experience to permit sweeping conclusions. Temporary paralysis of the diaphragm has been reported several times, and Neuhof thinks that the method is contra-indicated for patients suffering from pronounced intrathoracic disease. The only other reported complication is a single instance of musculospiral paralysis. Neuhof thinks it will prove a valuable addition to the methods of regional anesthesia when serious complications can be insured against.

SALVARSAN DEATHS.

SUPERINTENDENT WHITMAN'S REPORT.

Los Angeles, March 11, 1914.

Honorable Board of Supervisors,
Hall of Records, City.

Gentlemen:—

I herewith submit to your body a report covering, as near as is possible for me to do, all of the circumstances and particulars appertaining to the fatalities which occurred at the County Hospital following the administration of salvarsanized serum to eight patients, all of whom were suffering from the effects of syphilis in advanced stages of the disease. In some, there was disease of the bones; others were in advanced stages of locomotor ataxia, in which portions of the spinal cord were degenerated. The Wassermann test, which is considered reliable, was made in each and every case; in addition a cell count of the cerebro-spinal fluid and the butyric acid test were made, all corroborating the clinical diagnosis of syphilis.

Hence there can be no question as to the nature of the disease from which these patients suffered. The diagnosis having been confirmed, the question of treatment was a matter of selection. Well knowing that the older forms of treatment had proven ineffective in syphilitic cases, where the spinal cord was involved, and neosalvarsan, which has been regarded as a specific in the earlier stages, had proven ineffective when administered by the blood or into muscular tissue, another recognized mode of procedure was adopted, viz., the intra-spinal administration of salvarsanized

serum, the technique of which is somewhat complicated, but it is exact, i. e., the quantity given to each person is definitely known, and according to reports from medical authorities, is more effective than when given in any other way.

In this connection I desire to state to your honorable body that the Los Angeles County Hospital, instead of being an experimental station, as might be inferred from some published accounts concerning this unfortunate affair, is in fact, although progressive, one of the most conservative of its kind, as is evidenced by the fact that the intra-spinal method of using salvarsanized serum had been in use for at least a year in many medical centers throughout the country before being used in this institution, and medical reports seem to indicate that this method is becoming the method of choice by many physicians in the treatment of spinal syphilis. It follows therefore that the treatment here used was no experiment, and I desire at this time to emphasize the fact that no experimental treatment upon human beings has been conducted in this institution since my incumbency, nor will any be tolerated.

On the seventh of the present month, after consultation with several physicians, all members of the attending staff, Dr. A. T. Charlton directed the administration of salvarsanized serum to eight patients in the County Hospital, the serum having been prepared by himself according to authority. As all accounts so far published in the local press concerning the preparation and administration of this remedy to these patients are more or less inaccurate, I submit herewith attached in detail, Dr. Charlton's statement concerning the technique followed by him throughout the whole procedure.

STATEMENT OF DR. CHARLTON.

"On Friday, the sixth instant, between nine and eleven A. M., I withdrew about 15 c. c. of blood from the veins of the arms of eight patients, and from two others about 6 c. c. of blood only was obtained. The amount of blood received from the two latter patients furnishing an insufficient quantity of serum for the spinal treatment, I decided to make a dilution which would include eight spinals and two intravenous treatments, and this was done. Two ampules were used for this dilution. On account of the lapse of time the intravenous was not used.

"The blood was taken through sterile pipette placed in sterile centrifuge tubes and the serum

separated from the fibrin and red cells. The serum which was perfectly clear, was pipetted off to the amount of 5 c. c. and this was placed in a sterile glass stopper bottle; to this was added one, two or three milligrams of freshly dissolved neosalvarsan in sterile normal salt solution. Following this there was added to the preparation 8 c. c. of sterile normal salt solution, using a sterile graduated all glass syringe. This procedure was carried out absolutely with the serums from each of the eight patients separately. The preparations were then all placed in a water bath at a temperature of 54C for one-half hour. They were then placed in a refrigerator for twenty hours, each bottle labeled with patient's name and dosage for each.

TECHNIQUE OF ADMINISTRATION.

"Under the usual aseptic conditions from three to seven c. c. of spinal fluid was drawn from each patient. Then from each individual bottle there was taken the diluted salvarsanized serum, using a sterile graduated glass syringe, and with this syringe the contents were introduced through the same needle by which the spinal fluid was withdrawn."

I desire to state further that from the time my attention was called to these cases until the present, I have left nothing undone that would shed light upon the cause of this tragedy.

I personally drove to Pasadena and got the coroner, and at his request, went for the county autopsy surgeon. I also called in consultation a half a dozen or more prominent members of the profession, whose knowledge and advice I thought might be of service to us in this emergency.

I personally phoned to all of the morning newspapers, giving them the first information they had of the affair, and I have practically placed myself and the records of the hospital at the disposal of the public through the press and county officials ever since.

As to the embalming of these bodies prior to autopsy, I will state that this was not done at the county hospital, nor by anyone connected with the hospital, but was done without our knowledge after the coroner had removed the bodies from the hospital.

It is only fair to the coroner to state that to my personal knowledge he was advised by six or more physicians that an autopsy would not

reveal any characteristic lesions that would account for the deaths, and this opinion was substantiated by the autopsy. However, the autopsy was justified, since it revealed syphilitic lesions in the lung, liver and spinal cord in a patient who had denied having syphilis, thus corroborating the clinical and laboratory diagnosis and justifying the anti-syphilitic treatment.

The most plausible explanation of the cause of death in these cases is that oxidation had taken place in the neosalvarsan. This could have occurred through some defect in the glass container that was not apparent at the time the preparation was used.

In conclusion I desire to express our appreciation of the treatment accorded our county hospital by the great mass of the public and the press in this unfortunate affair, and I can only repeat that there is nowhere more sorrow concerning this unfortunate outcome of what was intended to be for the best health interests of the deceased patients than there is among the house and attending staffs of the Los Angeles County Hospital.

Very truly yours,

C. H. WHITMAN,
Supt.

Editorial in the *Southern California Practitioner* for March.

ATHLETIC SPORTS IN RELATION TO HEALTH.

It is strange that the problems of athletics rarely receive the attention of those who are most concerned with health, the supposed purpose of bodily exercise. The management of athletics is rarely found in the hands of a physician, by whose scientific guidance the various sports could be freed from the dangers attending some of the present athletic practices. Athletics have for the most part today become the province of the people at large. It is the trainer rather than the physician, the hero-worshipper rather than the hygienist, who directs and inspires physical exercises which ought to be undertaken primarily in the interests of a sound body and a sound mind. Games have developed into contests in which victory is sought at any human price. The "manager" is the foremost adviser, and the physician is called

on as a last resource to mend the damage that may have been done in an ill-advised struggle for athletic supremacy. Until there is widespread education as to the proper purpose of bodily exercise and the dangers that beset the indiscriminate and uncontrolled pursuit of athletics by every one whom the inclination stirs, it is a seemingly hopeless task to preach the gospel of reform.

Meanwhile the physician must develop sound judgment and sane advice. Only the beginnings have been made in this field of study. If football or rowing or bicycling have their dangers, what are they? These questions demand answers. Among the internal organs the heart and kidneys have hitherto received most consideration in connection with the physiology of exercise. There is an idea abroad that each form of athletics has its own peculiar type of defects. Just as one hears of the "tobacco heart," there are the alleged "bicycle heart," "football kidney," etc. This is not true. The results of athletic exercise may vary in degree but not in kind. Athletic exercises may be divided into feats of strength and feats of endurance. These do not differ essentially in their effect on the body. There are no important differences between the different types of athletic sports in respect to their physiologic effects on the body. The severe symptoms, however, make their appearance more prominently in sports like football, wrestling, bicycle contests, etc., which may call for extreme exertion. To what degree the distinctly harmful results of improper athletics may arise depends on a variety of circumstances. Age is a factor of significance. During the period of boyhood when the organs have not reached their full development, the person is unusually sensitive to muscular excesses. "Constitution" expresses in a somewhat vague way another factor which determines the fitness of a person for athletics. There must be adequate development, suitable nutrition and a competent nervous system, the latter element often being undervalued. Obviously, appropriate training furnishes another safeguard against the dangers of athletic overdoing. Much of what is called "training" in this country is, however, a combination of unscientific and sometimes irrational dietetics. Last

but not least, the degree of exertion required is a feature of determining significance when the ill effects of athletic sports are to be avoided. The distinction between doing and overdoing, says *The Journal of the American Medical Association*, needs to be learned and appreciated more than any other single factor in the rational pursuit of bodily exercise for health and enjoyment rather than for personal superiority and group supremacy.

An amusing incident happened some time ago in one of the Paris courts of justice. A vain, haughty woman was called as a witness, when the magistrate inquired her age.

"Twenty-five last August," promptly replied the lady.

The next witness was a young man, who at once acknowledged that he was twenty-seven years of age.

"Are you related to the last witness?" queried the magistrate.

"Yes; I'm her son," he replied.

"Ah!" mused the magistrate, "your mother must have married very young."—*Doctor's Factotum*.

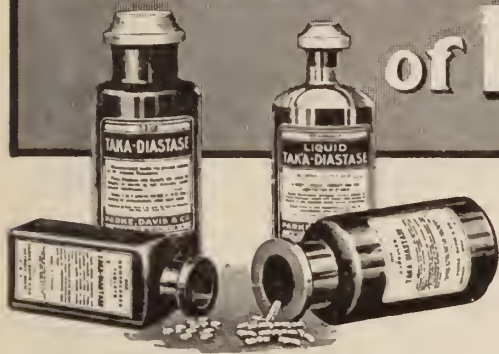
BUTTERMILK FOR ERYSIPELAS.

Arnold recommends buttermilk highly as an application for erysipelas. Whatever the stage of the disease he says the spread of the infection is immediately checked, the pain disappears, and the whole morbid process rapidly aborts when it is used locally. (*So. Clinic*).

An old farmer in Vermont, who had driven in to the village to make a few purchases, took back with him rather more hard cider than was consistent with careful driving. While going down a steep hill his horse stumbled, fell flat in the road, and refused to get up. The farmer looked at him a moment over the dash-board and then exclaimed:

"Git up, you old fool, or I'll drive over ye!"

Taka-Diastase of higher potency



By a new process of manufacture, after hundreds of experiments, we have doubled the strength of Taka-Diastase.

Under proper conditions of temperature and moisture, our improved Taka-Diastase will liquefy three hundred times its weight of starch.

In the treatment of amylaceous dyspepsia Taka-Diastase has been prescribed with eminent success for many years. It gives good results in chronic gastritis, in hyperacidity, in the vomiting of pregnancy, in infantile diarrhea and dysentery.

EVERY DESIRED FORM.

Taka-Diastase (powder).— $\frac{1}{4}$ -, $\frac{1}{2}$ - and 1-ounce vials; $\frac{1}{4}$ -, $\frac{1}{2}$ - and 1-pound bottles.

Taka-Diastase, Liquid.—8-ounce, 16-ounce, 5-pint and gallon-bottles.

Taka-Diastase in Capsules ($2\frac{1}{2}$ grains).—Bottles of 25, 100 and 500.

Taka-Diastase Tablets ($2\frac{1}{2}$ grains).—Bottles of 100.

COMBINATIONS.

Taka-Diastase, Bismuth and Ginger.—Capsules. Each capsule contains: Taka-Diastase, 2 grs.; Bismuth Subnitrate, 5 grs.; Powd. Ginger, $\frac{1}{2}$ gr. Bottles of 25, 100 and 500.

Taka-Diastase and Capsicum.—Tablets (C.C.T. 295). Each tablet contains: Taka-Diastase, 2 grs.; Powd. Capsicum, $\frac{1}{2}$ gr. Bottles of 25, 100 and 500.

Taka-Diastase, Cascarin and Strychnine.—Tablets (C.C.T. 384). Each tablet contains: Taka-Diastase, 2 grs.; Cascarin, P. D. & Co., 2 grs.; Strychnine Sulphate, $\frac{1}{100}$ gr. Bottles of 25, 100 and 500.

Taka-Diastase, Charcoal and Strychnine.—Tablets (C.T. 419). Each tablet contains: Taka-Diastase, 2 grs.; Charcoal, 3 grs.; Strychnine, $\frac{1}{100}$ gr. Bottles of 100 and 500.

Taka-Diastase, Ipecac and Nux Vomica.—Capsules. Each capsule contains: Taka-Diastase, 2 grs.; Powd. Ipecac, $\frac{1}{5}$ gr.; Ext. Nux Vomica, $\frac{1}{6}$ gr.; Oleoresin Black Pepper, $\frac{1}{4}$ gr. Bottles of 25, 100 and 500.

Taka-Diastase and Pancreatin.—Tablets (C.C.T. 385). Each tablet contains: Taka-Diastase, 2 grs.; Pancreatin, 3 grs. Bottles of 25, 100 and 500.

Taka-Diastase, Pancreatin and Nux Vomica.—Capsules and Tablets (C.C.T. 375). Each capsule or tablet contains: Taka-Diastase, 2 grs.; Pancreatin, 3 grs.; Ext. Nux Vomica, $\frac{1}{8}$ gr. Bottles of 25, 100 and 500.

Taka-Diastase and Pepsin.—Tablets (C.C.T. 391). Each tablet contains: Taka-Diastase, 2 grs.; Pepsin, P. D. & Co. (1:3000), 2 grs. Bottles of 25, 100 and 500.

Taka-Diastase, Pepsin and Pancreatin.—Capsules and Tablets (C.C.T. 296). Each capsule or tablet contains: Taka-Diastase, 2 grs.; Pepsin, P. D. & Co. (1:3000), 1 gr.; Pancreatin, 2 grs. Bottles of 25, 100 and 500.

Taka-Diastase, Pepsin and Strychnine.—Capsules and Tablets (C.C.T. 278). Each capsule or tablet contains: Taka-Diastase, 2 grs.; Pepsin, P. D. & Co. (1:3000), 2 grs.; Strychnine Phosphate, $\frac{1}{100}$ gr. Bottles of 25, 100 and 500.

In all of our Taka-Diastase preparations—liquid, powder, capsule, tablet—as well as in the several combinations with other agents (both capsule and tablet)—the high-potency product is now being used.

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THERAPEUTIC NOTES.

CONDITIONS OF REDUCED VITALITY.—It is especially in states of lowered vitality following continued application of whatsoever character marked by loss in bodily strength and nervous force, that Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is of more than ordinary value. It is not alone a tissue food but also serves as a nerve tonic. A distinctive feature possessed by the cordial is its palatability, an advantage appreciated particularly by women and children.

THE DELICATE SCHOOL GIRL.—Even the most robust and generally healthy children show the deleterious results of the modern system of educational "forcing" that prevails in most of our larger cities. The child that prevails the school year in excellent physical condition, after the freedom and fresh air of the summer vacation, in many instances, becomes nervous, fidgety, and more or less anemic, as the term progresses, as the combined result of mental strain and physical confinement in overheated, poorly ventilated school rooms. How much more likely is such a result in the case of the delicate, high-strung, sensitively organized, adolescent girl? It is certainly a great mistake to allow such a girl to continue under high mental pressure, at the expense of her physical health and well being, and every available means should be resorted to to conserve the vitality and prevent a nervous breakdown. Regularity of meals, plenty of sleep, out-of-door exercise without fatigue, open windows at night and plenty of nutritious food, should all be supplied. Just as soon as an anemic pallor is noticeable, it is a good plan to order Pepto-Mangan (Gude) for a week or two, or as long as necessary to bring about an improvement in the blood state, and a restoration of color to the skin and visible mucous membranes. This efficient hematinic is especially serviceable in such cases, because it does not in the least interfere with the digestion nor induce a constipated habit.

THE TUBERCULOUS INVALID.—The pricking of the Friedmann bubble but served to still further confirm and accentuate the vital importance of the well defined methods of treatment for tuberculosis, that have given such encouraging results, i. e., fresh air, sunshine, rest, nutritive reinforcement and judicious medication. A proper combination of these four remedial factors is practically certain to place the incipient tuberculous invalid upon the road to recovery, if the patient is intelligently handled and the treatment persisted in. While it is, of course, acknowledged that the first three non-medicinal agents referred to constitute the vital elements of the upbuilding régime, considerable aid is afforded by judicious medication. Hematinic reinforcement should certainly not be neglected, in view of the secondary anemia which is almost always apparent. Among the agents which have produced the best results in the revitalization of the blood, Pepto-Mangan (Gude) is the most generally eligible and acceptable. As it is thoroughly palatable, neutral in reaction, free from irritant properties and devoid of constipating effect, the digestion of the patient is not disturbed, while the appetite and general vital tone improve more rapidly and satisfactorily than when hygienic and nutritive measures are depended upon exclusively.

THE NEURASTHENIC INVALID.—Like the poor, the neurasthenic is "always with us," and while the stress and strain of modern life and living continue, the physician will be called upon to treat the more or less chronic invalid who exhibits all sorts of bizarre symptoms, in endless and kaleidoscopic variety. It is, of course, an easy matter to advise the physician to search out and remedy the operative cause of the disorder, but it is not always as easy to do this, especially when no organic changes are discoverable. While purely symptomatic treatment may be unscientific, it is usually essential, in order to gain and retain the confidence of the patient. There is, however, one pathologic finding in a large majority of cases, and that is anemia of greater or lesser degree. In some instances this may be found to be the essential cause of the neurotic symptoms. In any event, this condition should be corrected, and for such purpose there is no better remedy than Pepto-Mangan (Gude). When a hematinic is indicated for a nervous, cranky man, or a finicky, more or less hysterical woman, Pepto-Mangan is peculiarly serviceable, as the patient cannot consistently object to the taste, which is agreeable to every one. The digestion is not interfered with in the least, constipation is not induced, and the blood-constructing effect of the remedy is prompt and certain. It is always worthy of trial not only in the anemia of the neurasthenic invalid, but also in all conditions of blood and tissue devitalization.

SLEEPLESSNESS is one of the most troublesome ailments which medical practitioners are called upon to treat. It is annoying to the patient—to how great an extent probably only those who suffer from it can appreciate. It is troublesome to the physician because of its intractable character. Much, however, of the difficulty of treating insomnia satisfactorily lies in the complex association of the malady. The measures which will readily procure sleep in one case will often completely fail in another. The same thing is true of the specific hypnotic drugs; one will work at certain times, another at other times, and often neither is of any value. That is the doctor's common experience—until he uses Neurosine. Then he learns, for the first time, that there is a hypnotic upon which he can depend at all times and under all conditions. Even when sleeplessness is accompanied by pain or extreme nervousness—when pain is the actual cause of the insomnia—Neurosine does not fail him. And, furthermore, its great potency is not obtained at the expense of safety—another feature which discounts the ordinary hypnotics. There are no dangerous drugs in Neurosine. Surely, Doctor, such a remedy is worth the having!

A HIGH-POTENCY DIASTASE.—The doubling of the liquefying power of Taka-Diastase, through recent improvements in the process of manufacture, as announced by Parke, Davis & Co., lifts this agent into a position of commanding eminence as a diastatic ferment. So potent is this improved diastase that in ten minutes, under conditions of temperature and moisture corresponding to those existing in the normal stomach, it will liquefy three hundred times its weight of starch.

For the information of physicians who are unfamiliar with its nature and origin, it may be said that Taka-Diastase is obtained from the fungus *Aspergillus oryzae*, which from time immemorial has

been used in Japan for the saccharifying of rice. This fungus contains not merely an amylase, but a mixture of various enzymes. It possesses amyolytic power to a much greater degree than any of the other species of the *Aspergillus* family.

Taka-Diastase is serviceable in the treatment of amylaceous dyspepsia, in chronic gastritis, in hyperacidity, in the vomiting of pregnancy, in infantile diarrhoea and dysentery. It may be prescribed in liquid, powder, tablet and capsule forms, also in combination with other agents in capsules and tablets. It should be taken during or immediately after meals in order that it may act upon the starches in the stomach before the acid wave sets in.

THE NERVOUSNESS OF ALCOHOLISM.—In the unstable nervous states following alcoholic debauches—irritability, sleeplessness, etc.—Bromidia (Battle) will be found an agent of exceptional influence in bringing about a disappearance of the symptoms. It exerts a soothing effect upon the cerebrospinal centres and secures rest for the patient.

A SAFE AND EFFECTIVE SOMNIFACIENT.—A soporific agent of particular therapeutic worth and one especially indicated in women and children by reason of its freedom from danger and disagreeable after-effects is Pasadyne (Daniel).

Pasadyne is a concentrated tincture of *passiflora incarnata* and has been prepared by the same firm for more than thirty-five years. This preparation will be found of reliable worth in all nervous states. A sample bottle may be had by addressing the Laboratory of John B. Daniel, 34 Wall Street, Atlanta, Georgia.

A NOVEL EDUCATIONAL EXHIBIT AT ATLANTIC CITY.—Motion pictures were used as a means of demonstrating to the profession the methods used for producing Antitoxins, Bacterins, Vaccines and Curative Serum.

At the meeting of the American Medical Association, held in Atlantic City, June 22nd to 26th, the H. K. Mulford Company exhibited motion picture films, made by them at great expense, showing the different processes employed in the production of biological products.

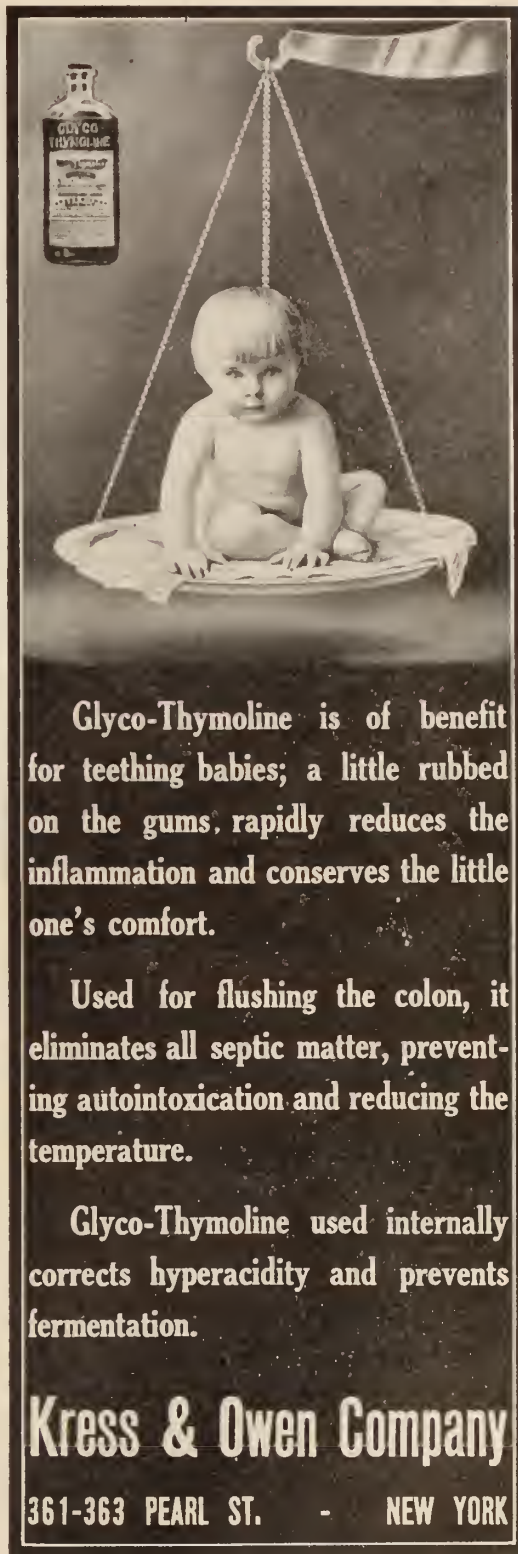
This is the first time that motion picture films have been used for showing the processes used in the production of biological products.

Not only did the films show the laboratory methods used but also the actual application of these preparations from the clinician's standpoint.

A short description was thrown on the screen before each process was shown, describing the pictures, so that they bore their own explanation.

Because of the fact that no suitable space could be secured in the exhibit hall, the H. K. Mulford Company arranged, through the courtesy of the Chalfonte, to show these pictures in the auditorium on the main floor of this hotel. These films were exhibited several times each day and arrangements were made so they did not conflict with the general or special sessions of the meeting.

Next to visiting the Mulford laboratories at Glenshire, which is a trip that every physician should avail himself of, an inspection of these films conveys a clear idea of what it means to provide adequate



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equipment for the production of the various biological products, particularly Diphtheria and Tetanus Antitoxin, Typho-Bacterin and preparations for the prophylaxis and treatment of infectious and contagious diseases.

THE GROWTH AND COLOR CHANGES OF HAIR.

The attempt to find an illuminating account of the factors which may modify or determine the growth of hair will usually be a vain one. The older writers, who did not always hesitate to make dogmatic statements when they were required to produce a finished account, sometimes discussed the subject with considerable freedom. Not so the modern scientific author, who realizes that every sentence from his pen is likely to be subjected to the scrutiny and criticism of someone who has studied the topic at first hand. The general descriptions of the processes of growth have been satisfactory. Facts concerning these processes are permanent acquisitions of physiology, but they do not commonly rise to the level of practical problems. Why does or does not the hair grow in certain regions in certain individuals? What are the conditions contributory to growth? How are the natural changes in color brought about and what determines them?

Experimental studies in this field cannot readily be conducted on man. Certain facts are, of course, matters of common observation. The beard grows anew after shaving, and this tonsorial practice is believed to stimulate the growth of the hair. Precisely why it does, is not clear. The beard is also said to grow more rapidly in summer.

If the pigment which produces the natural color of the hair is lacking, the hairs present a gray or white appearance. The silvery color may further be due to the presence of more or less air in the hair. To account for the blanching of the hair—the familiar accompaniment of old age and a phenomenon which frequently begins long before middle life is fairly concluded—various views have been set forth at different times. The silvery gray appearance which is seen in aging persons is probably characterized to some extent by the occurrence of large num-

ber of air cavities, and not by the destruction of the pigment. Hair pigment can be destroyed only by the most vigorous chemical treatment. Dry hairs contain more air and therefore will appear somewhat lighter in color than moist ones; but black hair may be dried to the utmost without becoming white, and the hair of mummies dried through the centuries still show their pigment precisely as do fresh hairs.

The explanation of the familiar color-changes of the hair is probably to be found, not in a destruction of pigment already present, not in any bleaching of hairs already formed, but rather in a complete renewal of the hair. Pigmented hairs fall out and are replaced by unpigmented or white ones. The appearance of gray or white hair is therefore attributable to the formation of a new hair coat rather than by the alteration of the old one. Completely pigmented hairs never turn gray; they fall out. It is nevertheless observed that the process of pigment formation may cease during the development of a hair. In that event the tip will remain pigmented though the base appears white.

How are we to harmonize the statements, asks *The Journal of the American Medical Association*, with the many published records of hair having turned white suddenly as the presumable consequence of fright or other profound emotion? A careful study of the reputed instances has invariably shown that they were mythical. It is popularly related that Marie Antoinette grew gray during the night after she was condemned to be executed. It is true that at her death her hair was gray; but her biographers all record that her hair had been gray long before the time of her death. It is also quite possible that the change in her hair while in prison was due to the fact that she did not have access to hair dyes and other toilet preparations. This may serve to illustrate the value of hearsay evidence and popular tradition.

The conspicuous changes which the color of the fur of certain species of animals undergoes at different seasons of the year, becoming white in the winter months, affords an opportunity of investigating this pronounced transformation seemingly so closely related to what is seen in advancing age in man. The studies of Schwalbe have demonstrated that here too there is no al-

teration of the color of the summer fur. The dark hairs fall out as the season advances and white hairs grow in their place. No sudden changes are found when accurate observations are instituted.

U. S. WARNS AGAINST ALLEGED HOG CHOLERA CURES.

Washington, D. C. Evidence of what appears to be a well organized campaign to delude farmers throughout the country into buying an alleged cure for hog cholera, under the impression that this has been investigated and approved by the United States Government, has reached the Department of Agriculture. Articles praising this medicine, Benetol by name, are being sent out widespread to newspapers. These articles are so worded that it appears as if the Department of Agriculture had received reports from the State of Minnesota showing that the medicine had proved most beneficial. As a matter of fact the one report received by the Department was an unofficial and unsolicited statement sent presumably from the promoters themselves. The Department attaches no importance whatsoever to this statement. It has no reason to believe in the efficiency of any proprietary cure for hog cholera and does not recommend any. Under certain conditions it urges farmers to protect their stock with anti-hog cholera serum but that is all.

In connection with this attempt it may be said that the medicine, which is now put forward as good for hogs, was advertised some time ago as a means of killing tuberculosis, typhoid, and cancer germs according to an article published in the *Journal of the American Medical Association*. At that time it was asserted that the Army was interested in it. As a matter of fact the Army was no more interested then than the Department of Agriculture is now.

In view of the evidence that the attempt to create this false impression is persistent and widespread, all hog owners are warned to communicate with the United States authorities before accepting as true any statement that the Government recommends any treatment other than the serum already mentioned.

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CARBON MONOXID AND CANARIES IN MINES.

The United States Government has recognized the usefulness of small animals in the detection of poison gases in mines as well as in rescue work which calls for the great care to prevent harmful consequences. Carbon monoxid, the most toxic of mine gases, is produced in blasting. When large shots are fired, where the ventilation is poor, the working-faces are too far ahead of the last break-through, harmful percentages of carbon monoxid and other poisonous gases may be encountered. Miners frequently go home sick from powder smoke. The latter sometimes contains as high as 4 per cent. of carbon monoxid while the products of the explosion of gun-cotton contain many times this proportion. Carbon monoxid is the constituent of after-damp most insidious in its action, most difficult to detect, and responsible for most of the deaths caused by mine explosions. For these reasons it becomes highly desirable to have a practical and sensitive indicator of quantities of carbon monoxid which may be in even the slightest degree harmful to man.

The United States Bureau of Mines has made an elaborate investigation to determine the relative usefulness of various animals and has found canaries and mice to be most suitable, the birds being the more sensitive of the two. They are easily obtainable and become pets of the men. One of the questions, says *The Journal of the American Medical Association*, was whether canaries become susceptible to the poison after several or many exposures. The smallest amount of gas which will affect a man is 0.05 per cent. The same percentages produce very slight symptoms in mice. Two-tenths of one per cent. is very dangerous to man. When the proportion of carbon monoxid is 0.15 per cent. canaries will show distress usually in from five to twelve minutes, with 0.2 per cent. of the gas in from two to six minutes. Much longer time is required before distress appears in men, although in the case of some persons the effects, when they do appear, may last for hours. Men cannot stand collapse from carbon monoxid as animals can. After distress and collapse canaries and mice recover quickly if given fresh air. In man, recovery is often a matter of days; and long-standing after-effects are by no means rare.

Men may feel distress, especially if they work hard, in the presence of 0.1 per cent. or under of carbon monoxid, when animals at rest in their cages do not show it. Sometimes different animals of the same species appear to be affected differently by the same proportion of the gas; hence more than one should be used at a time. Fortunately, no acclimatization of canaries appears to occur, so that these birds do not become less useful or a possible source of danger. Guinea-pigs, on the other hand, appear to become immune.

 LOW-GRADE MEDICAL SCHOOLS A POOR INVESTMENT.

The diplomas issued by thirty medical schools in the United States are practically worthless on account of the low standards of these schools, which prevent their recognition by the state boards. The facts are shown in a report on medical schools in a recent issue of *The Journal of the American Medical Association*. In from fourteen to thirty-two states the diplomas issued by these medical schools are not recognized. In these states the graduates of these thirty schools are not admitted to the examinations for licenses to practice medicine. This information should receive wide publicity, particularly in the interest of prospective medical students. Before selecting a medical school the student should know whether the training furnished and the diploma given by that school will qualify him for examination and for a license to practice medicine in any state he may choose. The fact that recognition has been withdrawn or withheld from certain medical colleges, is not always given publicity by state boards and, of course, is not published in the announcements of the colleges affected. Some students, therefore, have not been aware of the conditions until they have matriculated, or even until they apply for a license to practice. Hundreds of students have entered low-grade medical colleges, have spent large sums of money and have devoted three or four years to study, or have been graduated before they learned that their diplomas were practically worthless. This is wrong and places a life-long handicap on these students. Information regarding the non-recog-

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CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

dition of low-grade medical colleges by state boards should be in the hands of every prospective medical student when he chooses his college. This knowledge will enable him to avoid the serious mistake of making a bad start on his life's work. The intelligent student, thus informed, would certainly not waste his time and his money in a low-grade institution when in the same time and with perhaps even less money he could obtain a training in a thoroughly well-conducted medical school which would not only better equip him for his profession but would also enable him to render better service to the people who will depend on him for medical attention or hygienic instruction.

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THE COST OF PASTEURIZING MILK.

With a properly designed and properly operated plant, the average cost of pasteurizing milk is \$0.00313 a gallon, and the cream \$0.00634 a gallon, according to tests recently conducted by the U. S. Department of Agriculture. These tests also show that the "flash" process, by which milk is raised to a temperature of 165° F. and kept there for a moment only is more expensive than the "holder" process, in which milk is maintained for 30 minutes at a temperature of 135° to 145°. The "holder" process requires 17 per cent. less heat than the other, and in addition, there is a saving on the expense of cooling. For hygienic reasons, also, the Department recommends the "holder" process.

Many milk plants and creameries, it was found, do not attempt to make any use of the latent heat in the exhaust steam from their engines and steam drive auxiliaries. This heat would be sufficient, in many cases, for all the pasteurizing done in the plants, if it were properly utilized instead of being permitted to go to waste. When exhaust steam is used, it is calculated that for every 400 pounds of milk pasteurized per hour with it, one horsepower is taken from the boiler load, with a consequent saving in the fuel cost.

Another common source of waste was found to be the faulty arrangement of apparatus and leaky piping. The loss from these causes may run as high as 30 per cent. of all the heat required, a loss that can be reduced to negligible proportions by proper arrangement. The use of the regenerator, in particular, by which a large portion of heat in the pasteurized milk is transferred to the raw product, is also an important factor in securing maximum economy.

In considering the cost of pasteurizing, the investigators estimated the life of the necessary apparatus at four years, and the annual depreciation, in consequence, was figured at 25 per cent. This is due to the fact that the whole dairy apparatus must be taken apart after each operation in order to give it a thorough cleaning. This necessarily results in rough usage. The mechanical equipment, such as the engine, boiler, shafting, etc., has on the other hand, been considered as depreciating at the rate of only 10 per cent. per annum.

In these tests the results of which are contained in Bulletin 85, the investigators have confined themselves entirely to the engineering features of pasteurizing, their object being to ascertain as closely as possible the necessary cost of the process. The hygienic and sanitary aspects of the question are covered in other publications of the Department of Agriculture.

 THE GERMS IN MILK.

Living bodies, both great and small, are usually found in a definite place. The bacteria found in milk are indeed a mixed collection. The fact that certain organisms are frequently found in milk does not necessarily mean that they originate in the udder, but rather directs the search toward the focus of infection from which they find their way into the secretion of the mammary gland. It is known, says *The Journal of the American Medical Association*, that while the colon group is frequently found in water and milk its natural habitat is the intestinal tract of warm-blooded animals. The experts of the Dairy Division of the Bureau of Animal Industry in Washington have been investigating the sources from which the streptococci may gain entrance into milk. The foremost possibilities are: contamination with feces, which must always be considered as a possible source of contamination; the presence in the herd of one or more cows with infected udders, and the cow's mouth, which is known to contain streptococci. Its habit of licking the flanks and udder provides a more or less direct connection between the mouth of the cow and the milk-pail.

 CAMPHOR POISONING.

Editor Medical Council:

Last Sunday, January 4, 1914, Charles C., paperhanger, about 35 years of age, having been told that camphorated oil would "knock a cold out," resolved to give it a trial. They had a bottle from Larkin Company labeled "Camphor Liniment—Camphor and Sweet Oil, Formula, U. S. P., FOR EXTERNAL USE ONLY." He took a "good big tea-

Defective Elimination

readily becomes a chronic condition since the toxemic patient lacks that initiative which is necessary to active physical exercise; thus *cause* and *effect* form a circle which must be broken by rational therapeutic treatment while proper hygienic conditions are being re-established.

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spoonful" of this and became delirious in about five minutes and then began having convulsions. When I arrived he was just recovering consciousness and was very pale. I expected that he had taken aconite, but when I put my hand on his pulse I found it quite full but soft. I at once gave a powder of sulphate of zinc and ordered a tablespoonful of mustard, both in warm water. Before he had time to get much of the mustard down he was vomiting. We had considerable trouble in getting anything down him.

In looking up the formula of camphorated oil, I find that it is camphor, 1 to 10; and camphor-liniment, 1 to 4, or 120 grains to the ounce. The teaspoon he used will hold about 1/6 of an ounce, so that he probably took about 18 to 20 grains.

This is the first case of camphor poisoning that I ever remember hearing about since I have been practicing medicine.

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Vermont Medical Monthly

Official Organ of the Vermont State Medical Society.

Vol. XX, No. 7.

Burlington, Vt., July 15, 1914

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 Avoid overheating by dressing comfortably.
 Take plenty of exercise. Perspire freely.
 Take ample rest.
 Eat moderately, avoiding fatty and greasy foods.
 Drink fluids at moderate temperatures rather than iced.
 Protect foods from dirt, dust and insects.
 Use pasteurized or sterilized milk.
 Feed the baby only milk you know about and if in doubt, boil for protection.
 Clean up the dirty places. Burn, bury or remove the garbage.
 Drain puddles. Remove the breeding places of flies and mosquitoes and then do your swatting.
 Cover manure pits and empty them frequently.
 Protect your wells.
 Use only a water supply that is known to be uncontaminated, and, if in doubt, boil the water.
 Give children playgrounds, the streets are unsafe.

Don't swim in sewage.

The anti-typhoid vaccination is advisable for travelers.

Vaccination is necessary at all times.

Eat, drink, and be merry, tempering all activities with moderation.

Avoid rocking the boat.

Have a safe and sane Fourth of July.

A happy vacation and a healthful one to all, regardless of age, size, sex, creed, color, denomination or previous condition of servitude. "The first wealth is health."—*Med. Review of Reviews*.

Scarlet red, administered internally, has been recommended in the treatment of gastric ulcer as an adjunct to other measures. Give 15 to 20 grain doses in konselals three times a day.

Fissured nipples should be washed with 20 per cent. alcohol after nursing, and then according to Rudeax, the following should be brushed upon them: balsam Peru and tr. arnica, of each 2½ grams; lime water, 15 grams; sweet almond oil, 30 grams.



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Vermont Medical Monthly.

VOL. XX.

JULY 15, 1914.

NUMBER 7

ORIGINAL ARTICLES.

SURGERY OF THE LARGE INTESTINE.

BY

EDMUND M. POND, M. D.,
Rutland, Vt.

Surgeon to the Rutland and Proctor Hospitals.

What I wish to set forth in this paper entitled, perhaps wrongfully, "Surgery of the Large In-

Let us begin then by reviewing somewhat the anatomy and physiology of a normal intestinal tract. Starting at the stomach—this organ receives and prepares for digestion the food, which is then rushed through the "portal" of the intestinal tract, i. e. the duodenum, where it comes in contact with the bile and pancreatic juice, and where it remains but a short time. Nature here sees fit to fix this portion of the intestine in order to allow free passage from the stomach into the jejunum, but this very fixation, as will be seen later, often becomes a source of trouble. Absorption, as you know, does not take place

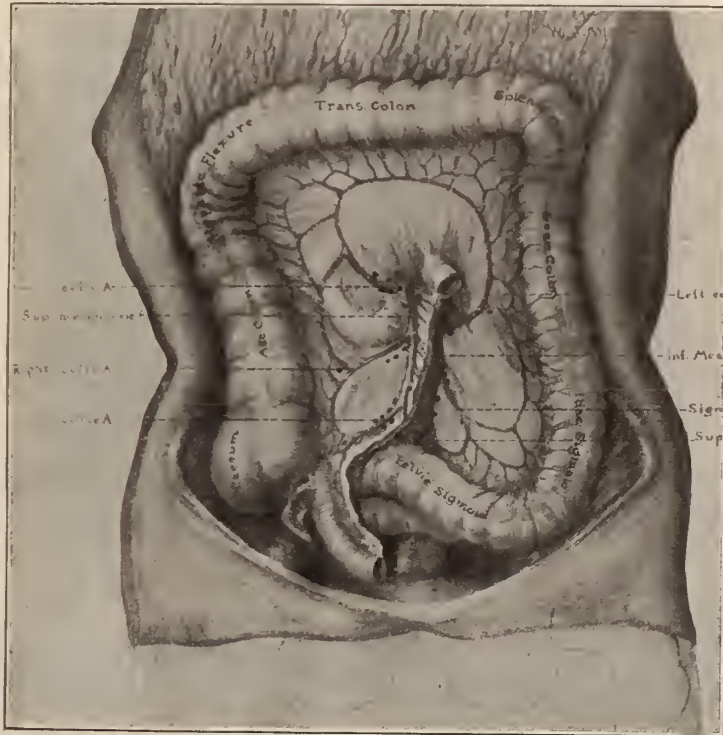


FIG. 1. NORMAL COLON. Courtesy Dr. Mayo.

testine," is, first, the very injurious effects produced by a large intestine acting improperly—effects so far reaching that their cause is often not suspected; and, second, the most rational ways of treating these effects and their cause.

in the stomach or duodenum, but begins in the jejunum, and is continued in the lower ileum and colon, up to the end of the splenic flexure. At the end of the ileum nature again fixes the small intestine by membranes, among them being

the ones specially described by Jackson and Tress, where the flow of food is impeded by the placing of the ileo-cecal valves for the purpose of prolonging absorption in the small intestine and of preventing regurgitation from the large intestine which begins at this point. (Fig. 1). This first and largest part of the large intestine, the cecum, which is very richly supplied with blood vessels receives the food from the ileum, and rapidly proceeds to absorb both solids and liquids, 50% of the liquids and 10% of the solids being

the stomach, changing its position as that of the stomach changes.

As stated above much absorption takes place in the cecum, gradually diminishing in amount till the splenic flexure is reached, after which it ceases entirely.

From the splenic flexure the refuse drops through the descending colon into the sigmoid, where it is retained until nature calls for its expulsion. The sigmoid is so arranged that it swings by its mesentery, and when distended

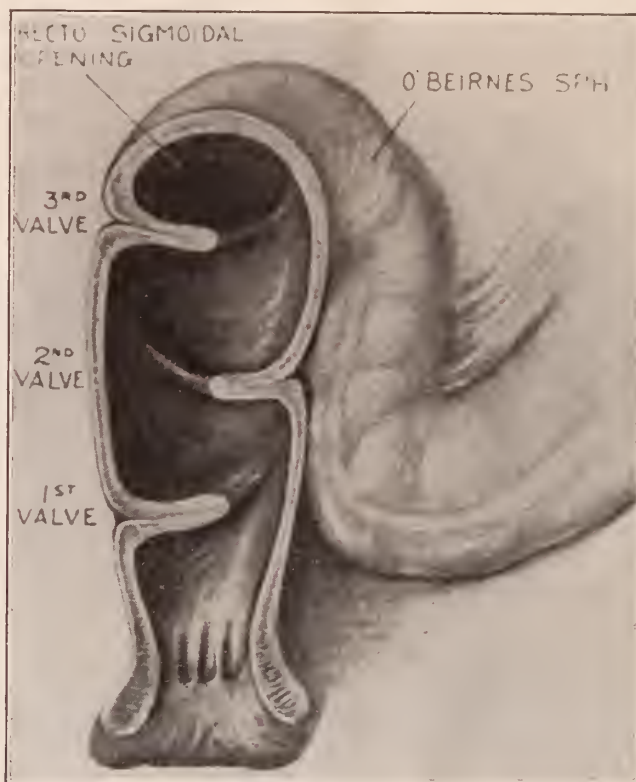


FIG. 2. RECTAL VALVES. Courtesy Dr Gant.

absorbed by the first half of the colon, most of this work being done by the cecum.

The intestine then extends to the hepatic flexure, another point of fixation, and from there to the splenic flexure, also fixed, and which is on a plane higher than the hepatic flexure, the relative position of these flexures retarding the flow of food and affording ample time for absorption.

The transverse colon, extending between these two flexures, is attached to the lower border of

often rotates to the median line, and sometimes even to the right side, this fact explaining why volvulus occurs so often in the sigmoid. At the end of the sigmoid the intestine passes upward and backward to the rectum, at which junction is placed another control, the sphincter of O'Beirnes.

From this junction the rectum passes downward, backward, and then forward to the anus, and is provided with a series of valves as is shown in Fig. 2.

The descending colon and rectum are normally empty. The large intestine is provided with a strong reverse peristalsis which rapidly carries fluids from the rectum to the splenic flexure, and even to the cecum, where absorption takes place, hence the principle of Murphy's drop saline.

The empty condition of the descending colon often created the mistaken idea during the early use of Roentgen Rays that stricture was here present. The rectum in abnormal conditions and when the care of the bowels is neglected is full of fecal matter, and especially so in the

of the intestinal tract). Note that the intestine passes here to the left which is highly necessary for proper drainage.

Fig. 4 on the contrary shows the jejunum turned sharply to the right by adhesions. This turning to the right, when not the result of adhesions, is often produced by stasis in the intestines far below and, from whatever cause, interferes seriously with stomach and duodenal drainage, and is supposed to account for acute dilatation of the stomach following operations and in acute diseases in which there is intestinal stasis.

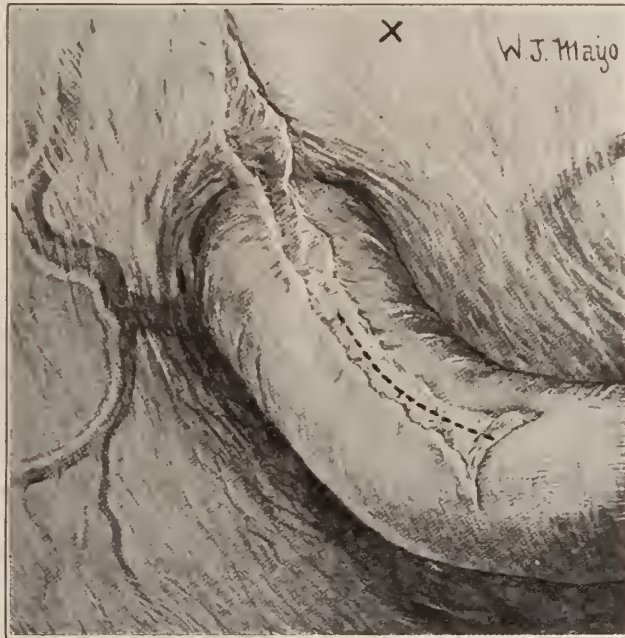


FIG. 3. NORMAL CURVE OF DUODENUM TO LEFT AFTER LIBERATION OF ADHESIONS.
Courtesy Dr. Mayo.

case of women in whom it may give severe uterine and reflex symptoms.

Having now thoroughly sketched the course and action of a normal intestinal tract, let us return and consider more particularly the points at which this same organ is likely to go astray.

Fig. 3 shows the normal duodenum passing through its mesentery, and the curve of the first few inches of the jejunum. (In this paper the jejunum is understood as beginning at the point where the duodenum passes through the mesentery, which is in accordance with Lane's division

Right here I wish to emphasize the fact that the former 90% mortality resulting from acute dilatation of the stomach has been reduced almost to zero by the simple procedure of placing the patient flat upon the abdomen with pillows under the chest and hips. This position restores the normal curve of the jejunum to the left, and allows the passage of stomach contents into the intestine.

Considering how ineffectual other methods, from stomach washing to gastro-enterostomy and even to gastric drainage, have been in the

relief of this usually fatal condition, this mode of treatment, almost absurdly simple though it be, cannot be valued too highly and should be firmly fixed in every physician's recollection.

The cecum, as we noted, is fixed; and the small intestine should enter it by a slight upward incline, and without kinking. In this region thin membranes often cover the cecum and the end of the ileum. For a long time these membranes were thought to be adhesions resulting from peritonitis, but are now recognized as a remains of foetal development. These membranes often-



FIG. 4. DUODENUM TO THE RIGHT BY ADHESIONS.
Courtesy Dr. Mayo.

times produce kinks by contracting, the one formed most often in this way being known as Lane's Kink. See Fig 5.

At the next point of fixation, the hepatic flexure, the intestine takes a dip backward, then forward, and then to the left. The splenic flexure is similarly situated on the left side, the two being connected by the transverse colon. Owing to the attachment of the latter to the

lower border of the stomach it must follow the changes in position of the organs above as in gastropptosis and visceroptosis, and this dropping of the transverse colon in turn produces angulation of the hepatic and splenic flexures.

Fig. 6 shows the transverse colon carried downward by a gastropptosis. Figs. 7, 8 and 9 show other distortions of the colon with adhesions.

These distortions of the large intestine produce kinking and consequently interference with drainage.

These locations which have just been particularly considered are the ones where trouble is most likely to arise, but strictures, neoplasms and adhesions may produce obstructions in any part of the intestines.

When the intestinal tract acts normally there will be, as we have seen, a steady outflow of food from the stomach, through the intestines to the sigmoid, where it will remain until natural evacuation takes place. But here let me emphasize the fact that even a daily movement of the bowels is no sure indication that stasis is not present, as the food may not all be passing, and a gradual accumulation may be forming in the large intestine, especially in the cecum and hepatic flexure. And now for the effects of this very common stasis of the large intestine. These effects are both local and general. The local effect is accumulation of fecal matter behind points of angulation, and this brings about changes at the lower ileum and at the upper jejunum. These in turn result in the discomfort of a distended and heavy large intestine, together with auto-intoxication, retardation of stomach emptying with reflex stomach disturbances which may lead to ulcers of the stomach and duodenum; the curve of the intestine at the duodeno-jejunal junction will be changed, causing retardation of the passage of food with derangement and possible dilatation of the stomach. The efforts made by the stomach to pass food through the dammed up intestine may produce hypersensitiveness of the pylorus, giving symptoms of pyloric obstruction. Distension of the abdomen and flatulency may be present, and the distension of the cecum may give symptoms of appendicitis. The angulation at the hepatic flexure, by pressing upon the bile duct and the pyloric end of the stomach and duodenum may



FIG. 5. LANE'S KINK. Courtesy Dr. Mayo.

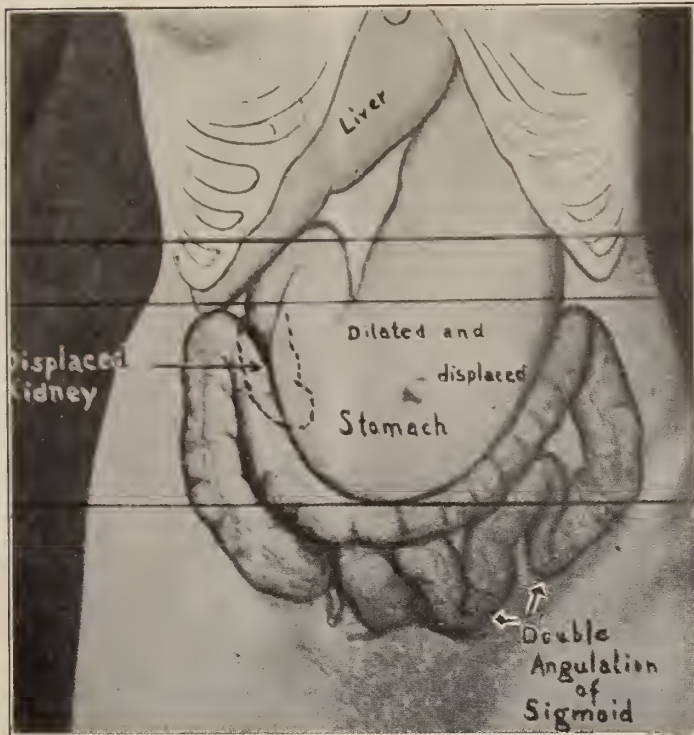


FIG. 6. TRANSVERSE COLON AND STOMACH "DOWN." Courtesy Dr. Gant.



FIG. 7. DISTORTION OF COLON. Courtesy Dr. Gant.

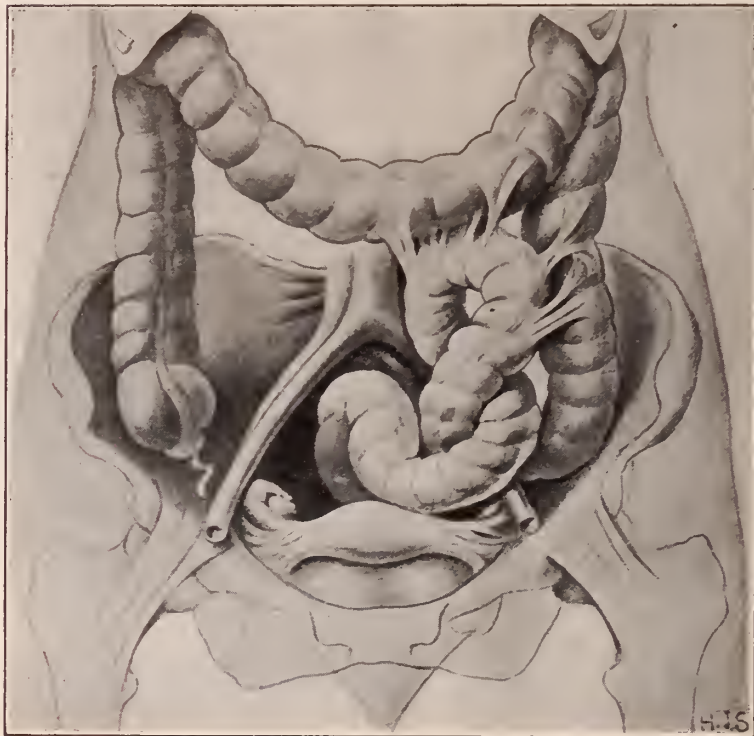


FIG. 8. DISTENSION OF COLON BY ADHESIONS.
Courtesy Dr. Gant.

give symptoms of gallbladder disease, duodenal and gastric ulcers; while a distended transverse colon may simulate a diseased or dilated stomach. An impaction in the splenic flexure may give symptoms of cardiac trouble from upward pressure in this region.

As the intestinal contents are held back, germs from the colon may work their way back into the ileum and uniting with germs already there form new and more virulent kinds. This combined absorption from both large and small intestine may produce profound auto-intoxication.

The germs may invade the bile ducts, pancreatic ducts, and other cavities, starting up local infections of all sorts. The absorption of these

Rheumatism and chronic joint diseases are also attributed by many authors to intestinal stasis and are thought to be brought about directly by the absorption of ptomaines and germs.

From the foregoing citations I think it will be admitted by all that from varying degrees of intestinal stasis we may have exceedingly varied, far-reaching, and desperately injurious results. In view of these admissions I wish to make a most earnest plea for a more thorough examination of the so-called dyspeptic and constipated patients.

There is no greater mistake being made daily than in the treatment employed with this class



FIG. 9. DISTORTION OF COLON BY ADHESIONS.

Courtesy Dr. Gant.

infections into the general circulation is productive not only of ill feeling but also of changes in the ductless glands and kidneys. We know that the chain of ductless glands, the pituitary, the adrenals, and the thyroid, preside directly over the destruction of poisons in the system; and an overworked condition of these organs may be followed by Addison's disease, and exophthalmic goitre. Nephritis from overworked kidneys may also follow.

Nerve derangements also result, such as headache, to the truth of which nearly all of us can undoubtedly bear personal witness, hysteria, neuritis, and even tic douloureux.

of patients of giving them at random a digestive, a tonic, or a purgative, for a deranged stomach or intestine, or for constipation, and of never examining them to find out the cause and whether they need supports for prolapsed organs, exercises for correction of posture, etc. The same is also true of gynecological patients—most of them round shouldered, constipated, suffering from auto-intoxication to a greater or less degree, with a pendulous abdomen, a prolapsed stomach, colon, and probably right kidney as well.

Since posture plays so important a part in the production of visceroptosis, the correction

of a faulty one should be among the first considerations. Fig. 10 shows the correct posture.

It will be noted that the chest is raised, the lower ribs expanded, and as the diaphragm is attached to the lower ribs it is drawn high and tense. Contrast this with Fig. 11, which shows a bending of the spine forward, a contraction of the lower ribs, a sagging of the diaphragm, and a general visceroptosis, the stomach being

proper tonics, laxatives, and enemas will cure a large number of milder cases.

Lane of London recommends as the best palliative treatment the use of paraffin oil which softens the stools, lubricates the intestines and is non-absorbable, together with an abdominal support provided with a spring over the cecum which hastens the upward current from this portion of the intestine.



FIG. 10. CORRECT POSTURE. Courtesy Dr. Goldthwaite.

carried down and with it the transverse colon. Goldthwaite of Boston in a recent very able article calls particular attention to this faulty posture and cites remarkable results obtained from correcting it by exercises, and by a properly fitting binder (See Fig. 12), which holds the lower abdomen snug, pushing the displaced organs upward, raising the diaphragm, and giving plenty of room to prolapsed organs. This treatment, together with carefully selected food,



FIG. 11. INCORRECT POSTURE. Courtesy of Dr. Goldthwaite.

But unfortunately many cases which might at one time have been cured by such means have been so long neglected that they have associated with these arrangements, adhesions and ulcerations to such an extent that nothing but surgical interference will correct them. Many opera-

tions have been tried, many of them giving only palliative results even when performed by eminent surgeons. Before resorting to an operation of any kind in these severe cases every possible means of diagnosis should be exhausted so that before an operation is performed the cause of the trouble may be exactly located. Certain cases operated upon for supposed gall-bladder disease have been greatly relieved by the liberation of adhesions between the gall-bladder, colon and duodenum; and others by cutting the adhesions which turned the duodenum to the right, doing a gastro-enterostomy and thus restoring the normal relation of the small intestine.

Cases diagnosed as appendicitis, in which upon operation the appendix was found to be normal, have been cured by liberating adhesions and releasing Lane's Kink. And here let me say a few words regarding the necessity during appendicitis operations of carefully examining the ileo-

it produces this same upward kink, in which case it should be fastened to prevent rotation.

We now come to the more severe types of cases, dependent upon adhesions, strictures, and obstructions with which are associated inflammatory and ulcerative conditions to such an extent that no mild methods can effect a cure. For years this class of cases has baffled the surgeon, though various operations have been attempted for its relief. In mucous and ulcerative colitis without strictures and kinks, the operation of fixing the appendix to the outer abdominal wall and using the appendix as a means of irrigation and drainage has given fairly good results. The operation of making a small fecal opening in the cecum, allowing part of the intestinal contents to pass through a tube into a receptacle, using this tube as a means of irrigation and drainage and so giving rest to the large intestine, has also given good results. A still more radical opera-



FIG. 12. GOLDTHWAITE ABDOMINAL SUPPORT. Courtesy Dr. Goldthwaite.

cecal junction and of correcting any deformity there present, as a constriction at that point is often the cause of stasis in the small intestine.

At the same time attention must be directed to the ill results following too free liberation of these adhesions. Fig. 13 illustrates a reverse kink in the ileum that may take place if all the adhesions below the lower ileum are severed, and traction directed upward by other attachments. In this faulty correction of adhesions we have simply converted a downward kink into an upward one and have not benefited the patient. So in performing this operation these possibilities must be carefully studied, and the condition so corrected that the ileum will pass freely and without obstruction into the cecum. It is sometimes found too that the cecum, which is normally fixed, is movable, and that as it rotates inward

tion which has given satisfactory results in severe ulcerations and mucous colitis is that of severing the ileum from the cecum, allowing the entire contents of the small intestine to pass through a fecal fistula, draining the cecum, and so affording the large intestine a complete rest for a number of months, after which time the severed intestine is reunited.

While all these operations deserve consideration, Lane of London during the past ten years has demonstrated unquestionably the best means of dealing with these severe cases, as his operation corrects both the ulcerative condition and the mechanical obstruction. In his operation he side-tracks the large intestine by severing the ileum from the cecum, and makes a lateral anastomosis with the sigmoid. If the large intestine is in an ulcerated condition he removes it unless the

patient's condition forbids, in which case the removal is left for a secondary operation and the intestine for the time being is merely side-tracked. And here let me ask why it is not as reasonable to remove an ulcerated, worthless, and harmful large intestine as to remove a diseased uterus?

Among the remarkable cures by Lane following upon this operation are those of severe auto-intoxication, nervous phenomena, and renal complications. Two of his most spectacular cures are, first, a case of Addison's disease of years'

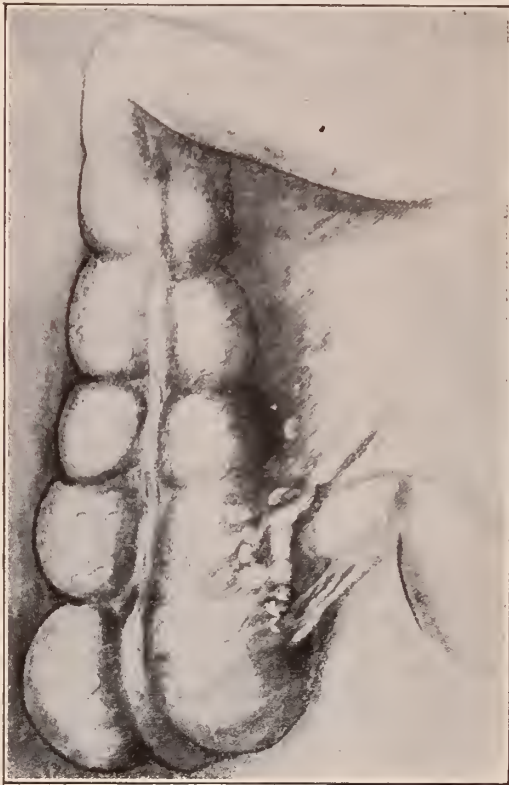


FIG. 13. ILEUM KINKED UPWARD. Courtesy Dr. Mayo.

to a white man; and, second, a very severe case of tic douloureux, also of years' standing, sent to him for the removal of the Gasserian ganglion, the person changing in appearance from a negro disappeared within a few days after operation, standing, in which the bronzed pigmentation and which was immediately and permanently cured solely by the side tracking of the ileum.

The report of such cases assures us absolutely of the far-reaching and fearfully injurious effects

of poisons arising from intestinal stasis, and also proves conclusively that the large intestine is nearly always the offending organ. Other operators the world over are now confirming the advisability of Lane's practice in regard to side-tracking the large intestine in this class of cases.

In this connection I would like to mention that when appendicitis was first recognized as a surgical disease some twenty years ago the writer happened to have a long series of very septic cases running over several years. The cases were largely general suppurative peritonitis. At first, case after case died after operation, irrigation, and drainage. Finally in three cases near together a fecal fistula occurred in the gangrenous cecum, a large amount of gas and fecal matter passing. These three cases at once began to improve and eventually recovered.

Noting this I began to make fecal fistulas at the cecum, emptying by irrigating both large and small intestine at the time and continuing the irrigation daily. The cases so treated nearly all recovered.

This is Lane's principle, though carried out in another way, and applied to septic peritoneal cases combined with the intestinal auto-intoxication. An account of this procedure was reported at the time.

Try kava in treating gleet.

Solanin is recommended in whooping cough.

Powdered extract of ipecac stimulates the hepatic function.

Combine squill and spirits nitrous ether in the treatment of strangury.

Bacillus of lactic cultures are being sprayed into the throat of "carriers."

Give ergot with quinine if the latter causes tinnitus aurium to a disagreeable degree.

Syrup of the iodide of iron may be given in pleural effusion when the patient is much debilitated.

Add prepared chalk to the milk of patients in whom milk provokes acid regurgitations, or give the chalk separately.

Forty-five grains of salol in ten drachms of liquid petrolatum is a good swab or spray for chronic cases of pharyngitis.

THE NURSE IN PRIVATE PRACTICE THIRTY-THREE YEARS AGO AND TODAY.*

BY

J. B. WHEELER, M. D.,
Burlington, Vt.

When I began practice a generation ago, the Mary Fletcher Hospital was only three years old and none of the few nurses whom it employed had, so far as I can recollect, gone out into private work. There was, practically, no such thing as a trained nurse in Burlington. There were professional nurses, women who did nursing for a living, but not many of them. Patients were cared for, as a rule, by other members of the family or by benevolent neighbors and it was in this way that the few nurses of that day learned their business.

What sort of nurses were they? Well, that depended almost entirely on the kind of women that they were. This statement is also true to a great extent as regards nurses nowadays, for there is perhaps no calling in which the personal equation is as important as it is in nursing. But you, for instance, have all undergone three years of the same training and your diplomas are evidence that the competency which that training has given you is up to the standard. So that, no matter how much you may differ from each other in personality, you are much more alike than the nurses were whose training was derived entirely from their own observation and experience in the narrow field of their own private practice. A few of them, whose intelligence, efficiency, conscientiousness and tact were naturally of a high order, were admirable nurses. Others, a much larger proportion, who were less highly endowed with those qualities, were merely tolerable; while a not wholly insignificant minority were so entirely lacking in them as to be worse than worthless.

One well-marked characteristic of the nurse of thirty-three years ago, was age. The modern idea of a nurse is of a trim, vigorous, active, good-looking young woman, but in those days the nurses were all middle-aged or elderly and looked motherly or even grandmotherly. This was almost necessarily the case, for in the absence of training schools, it was hard for a woman to get much experience by nursing in

her own family or among the neighbors, until she had been at it for a long time. Another reason for the advanced age of the nurses of that day was that most of them did not take up nursing as a calling until some other means of support had failed them, as in the case of widows left penniless by the death of their husbands. I was twenty-eight years old when I began to practice in Burlington and I do not recollect a nurse of that period who was not old enough to have been my aunt, if not my mother. This maturity, when it had not reached the condition of over-ripeness, had its advantages and its disadvantages. If a middle-aged or elderly woman was of the right sort, even though her training amounted to little, according to modern notions, she was a better nurse than she would have been ten or twenty years earlier in her life, by reason of the riper judgment and sounder common sense which the years bring to such a person. But if she was not of the right sort, her age simply made her opinionated and obstinate—in fact I don't think that pig-headed would be too strong a term to apply to some of those worthy old ladies. They had had so much "experience with the sick" that nobody could teach them anything, and if such a woman, out of the depths of her vast "experience," had evolved the idea that strong green tea was a good thing to feed to a baby a week old, you would have had to stand over her constantly to keep her from putting her theory into practice. I knew of a case where such a person actually did that very thing.

These nurses had, in a pre-eminent degree, the failing to which we all are more or less prone, namely that of drawing sweeping conclusions from a few isolated facts in their own personal experience. As if a person, one of whose friends had died after an operation for appendicitis with perforation and general peritonitis, should express the conviction that all appendectomies are sure death. Some twenty years ago I did a radical operation for a beginning cancer of the breast in a patient about fifty-five years old. After she had gone home from the hospital, one of the first persons she met was an old nurse who had had a "heap of experience with sick folks and had seen lots of cancers." This wise old party was greatly shocked to hear that her friend had "had an operation." "Why," said she, "cancers always come back after they're cut out—worse than they were before." The

*Address delivered at the graduating exercises at Mary Fletcher Hospital.

patient told her that several good surgeons had advised the operation, because the disease, if let alone, was almost certain to be fatal, while the operation, if done in season, gave a good chance of cure with very little risk to life. "Well," said the old nurse, "I'll give you three months to live." Fortunately the patient had sense enough to be amused at this encouraging and tactful prognosis, instead of being annoyed or worried by it. She lived in excellent health for fifteen years and died of apoplexy at seventy.

Few, if any of us, as I have said, are free from the tendency to dogmatize in the strength of our personal experience, and the tendency increases with age. But its finest flower and fullest fruition was to be found among the experienced old nurses.

They had their other faults also, notable among which were garrulity and gossiping, but taken by and large, they were not such a bad lot after all. I have already called attention to the differences between them and remarked that the best of them were admirable, and so they were. They were fine specimens of women and in the state of medical knowledge existing in their time, no one could have cared for the sick more faithfully, sympathetically and efficiently than they did. The merely tolerable ones generally knew how to handle and lift a patient, could make and change a bed, often were good cooks and generally did pretty well, except in emergencies which had not formed a part of the experience of which they talked so much.

For example:—

There was a lady in a village not far from here, who had an endometritis with occasional, pretty severe hemorrhages, for which she was put to bed in charge of an "experienced" nurse, not a trained nurse or a domestic nurse, for there were none such in those days, but a woman who was incessantly and magnificently eloquent on the subject of the countless number of confinements that she had attended and the awful cases of all sorts that she had "pulled through." Late in the evening of the second day the patient told the nurse that she was feeling badly and pretty soon said "I believe I'm having a hemorrhage." The nurse snatched off the bed-clothes, caught a glimpse of blood on the sheet, threw up both hands with a wild whoop and rushed yelling into the street. This demonstration did not

greatly reassure the hired girl, who was the only other person in the house, but she kept her head well enough to run for the doctor, who lived close by. The patient fortunately took no great harm, but no thanks to the nurse for that. And yet the nurse was not so bad as you might think. Under ordinary circumstances she took pretty good care of her patient. But presence of mind was not one of her attributes and when confronted with an unaccustomed emergency, she lost her head. If she had been thoroughly trained, she would have become accustomed to such emergencies and, what is of much more importance than familiarity with any situation, in particular, she would have been taught to practice self-control and not to go into hysterics when things suddenly look alarming, or, if her temperamental peculiarities proved insuperable, she would have been dropped from the training school and advised to choose some calling in which a level head is not so absolutely necessary as it is in nursing.

But perhaps I have thrown enough brickbats and bouquets at the memory of your predecessors. You doubtless expect to hear something about yourselves as well as about nurses of a generation ago, and I assure you, without the slightest intention of flattery, that I had much rather talk *to* you than *of* them.

On an occasion like the present, it is customary to offer words of counsel to the class who, in the usual phrase, "are going out into the world to engage in the noblest of callings." I do not propose to depart entirely from this custom, but I am not going to talk about the really great matters, which you already know to be essential to success in a nurse's career. Conscientiousness, reliability, industry, obedience, loyalty to patient and doctor—if the training which you have received and the innumerable graduation addresses which have been delivered on these subjects have not convinced you that they are cardinal virtues in a nurse, I fear that no remarks of mine would have much effect. But I am going to offer a few suggestions regarding some of the matters which, if not cardinal virtues, are of great importance in private practice, both as regards nurse and patient.

One of these matters is your own *health*, which should not be neglected while you are looking after that of your patient. You cannot

do your best for your patient unless you are well yourself, and private nursing, with its broken sleep and irregular meals, is a drain upon health which can be counteracted only by taking proper precautions. In a trying, confining case, take every opportunity that you can, without neglecting your patient, of making up sleep and getting out of doors, and in the intervals between cases, when you need and ought to have plenty of recreation, be rather shy of dances and other entertainments which keep you up late at night. Take care, also, of your sight and hearing. They are almost as important to your patient as to yourself and if you have the slightest suspicion that anything is wrong with either of them, a specialist should be consulted at once. I recollect a mistake once made by a nurse, which I always attributed to trouble with her eyes, although it is possible that the trouble may have been farther back in her head. She wasn't a trained nurse either, though a most excellent, kindly and unobjectionable soul. A lady, who was a guest in my house was taken pretty acutely sick and when her convalescence had got under way and she began to get hungry, she expressed a desire for a nice slice of bread and butter. The nurse, greatly charmed at this evidence of awakening appetite, hastened to the kitchen and returned with the provisions. The patient eagerly took a bite, chewed it rather meditatively, swallowed it with some effort and then said, working her lips while she spoke, that she guessed her appetite wasn't quite so good as she thought it was, or perhaps she wasn't well enough yet for bread and butter; anyhow it didn't taste as good as she thought it was going to. When pressed for particulars she said that of course the fault was with her taste, but it *seemed* as if there was something wrong with the butter. An aspersion of the butter was regarded as such a serious matter in our household, that a rigid, non-partisan investigation was at once instituted, which resulted in the discovery that the nurse instead of going to the ice chest, had buttered the bread from the contents of a plate that stood on the pantry shelf, which plate contained, not butter but cold hasty pudding.

Now the nurse was near-sighted and I laid the mistake to that, for she was country-bred and knew butter from hasty-pudding well enough. The mistake that she made was merely ludicrous, but you can imagine what the consequences of such eyesight might have been, if,

instead of butter and hasty pudding, it had been a question of quinine and morphine, or of drops and drachms.

Tact is a quality with which, in its fullness, few of us are blessed, but it is one of the most valuable traits in a nurse's character. To get along with a nervous, irritable patient and, what is often harder, to get along with the patient's family; to get along with the servants in the house; to accomplish all that you know to be necessary in caring for your patient with the minimum of disturbance and inconvenience to the household—these are some of the things that require tact on the part of a nurse. If she succeeds in these respects, she will always be welcome in any family where she has worked, but if she fails, she may be tolerated because of her efficiency and knowledge of her business, but people will not enthusiastically demand her services.

Some years ago an old gentleman, a patient of mine, had a sickness of about two weeks and Miss Churchill kindly sent one of her undergraduate nurses to care for him. After his recovery I asked his wife how they liked their nurse. "Very much indeed," she said, "of course my husband isn't used to being ordered by a girl of twenty and, at first he demurred a little, but she was so nice about it that, in a day and a half, he was doing exactly what she wanted him to, without realizing that he was under orders at all." Now if that girl had not been thoroughly tactful she might, with such a patient, have made herself so disagreeable in the way she issued her orders, that she would have exasperated him and, probably, would have done him more harm than good. Certainly she would have incurred the dislike of himself and his wife, instead of winning their friendship, as she did.

Now this school can train you to know your business and to be efficient, but it cannot furnish you with an outfit of tact. For that you must depend upon your natural endowments which can, however, be greatly developed by careful observation of the characters, tastes and mental attitudes of your patients. I do not need to point out to you the desirability of being on friendly terms with your patients. If they like you and your ways, they will co-operate with your efforts in their behalf, in a cheerful way, which will produce better results than the grudging compliance yielded to a person who unnecessarily

arouses antagonism. One thing which a tactful person fully realizes, is that she can carry essential points in a controversy more easily, if she yields in non-essentials.

As an instance of antagonism unnecessarily aroused by lack of tact, I might mention the case of a lady to whom I sent an excellent nurse, well trained, competent and efficient beyond the average. The patient, after going through a year of severe nerve strain, had an attack of grippe which, for a few weeks, prostrated her altogether, nervously and generally. When she got well she commented to me on her nurse. "She is a good nurse," she said, "understands her business, and took good care of me. Everything that I needed to have done she did well. *But* I wouldn't employ her again if I could help it." I was surprised and asked what the matter was. "Why," said the patient "she doesn't seem to realize what is annoying and what isn't. For instance, there was one afternoon when I felt perfectly miserable. There was nothing for the nurse to do for me for several hours and all I wanted was to lie perfectly still and be quiet. So she took the opportunity to catch up with her correspondence and all the afternoon she sat about five feet from me and wrote and wrote till I thought the scratch, scratch, scratch of her pen would drive me crazy." "Well," I said "why didn't you ask her to stop, or to go into another room? She wouldn't for the world have done anything that she thought would annoy you." "Well," the patient said "I didn't want to seem fussy—I'd fussed and bothered a good deal already—and besides, it seemed to me that she might have realized the possibility of her writing being annoying. Of course I was nervous and fussy—that was one great reason why I needed a nurse—and it seems to me that it was her business to take particular care that I was not unnecessarily irritated." The patient went on to give several other instances of minor annoyances inflicted by her perfectly conscientious and well meaning nurse, who simply failed to realize that she was doing anything of the kind. If she had studied her patient's mental condition as carefully as she did her physical, paid as much attention to her nerves as she did to her bowels and noted her likes and dislikes as carefully as she did her pulse and temperature, she would have done her patient more good than she did and would have won her friendship instead of her dislike.

Do you say that this was heedlessness and not lack of tact? Well, then, take it from me that a tactful person is never heedless.

I don't suppose it is necessary for me to warn you against *talkativeness* and *gossiping*, but nevertheless I am going to say something on these subjects. A talkative person always becomes tiresome and, as for gossip, although Mrs. A. may be highly entertained by a nurse who furnishes her with all the details of Mrs. B.'s housekeeping, her enthusiasm for that nurse will cool off rapidly as soon as she realizes that her own domestic affairs are liable to be similarly ventilated for the entertainment of the next family in which the nurse practices. A nurse ought to be anything but glum and stolid, but, all the same, taciturnity is a better trait than garrulity and it would do most nurses (and doctors too) no harm to cultivate it. When you do talk to a patient say little about yourselves and nothing about the affairs physical, financial, or moral, of your other patients. There are lots of other ways of being entertaining. One is to post yourselves on current topics, the affairs of the world outside the circle of your acquaintance and talk about them. Or cultivate the art of reading aloud, which, if well done, will give more pleasure to convalescents, especially if they cannot use their eyes much, than almost anything that you can do.

There are so many subjects on which suggestions might be offered, that I could go on for the rest of the night before I should run down. But I spare you any such infliction. Perhaps you are already beginning to think that the cultivation of taciturnity would do me no particular harm. So I shall touch upon only one other topic, and that is *cheerfulness*.

Keep your low spirits, if you have any, for exhibition elsewhere than in the sickroom. Sick people are easily depressed and it does them no good to have their nurses melancholy or even indifferent. If you have the blues don't let your patient know it and especially if you feel that the case is going badly don't let the patient suspect that you have any such feelings.

"It's not your business by your face to show

All that your patient doesn't want to know."

And don't appear indifferent to your patient. Make him feel that you are, for the present, more interested in him than in anything else in the world.

As Oliver Wendell Holmes says, in some lines

addressed to physicians, but equally applicable to nurses:—

“And last, not least, in each perplexing case,
Learn the sweet magic of a cheerful face,
Not always smiling, but at least serene.
When grief and anguish cloud the anxious
scene,
Each look, each movement, every word and
tone
Should tell the sufferer you are all his own.
Not the mere hireling, purchased to attend,
But the warm, ready, self-supporting friend,
Whose genial presence in itself combines
The best of tonics, cordials, anodynes.”

And now nothing remains but to bid you
goodbye and to express on behalf of the Hospital
and its training school and attending staff, our
regret at your departure, our congratulations
on the completion of your training and our hearty
wishes for your success. That these wishes will
be fulfilled we have not the slightest doubt. I
have described at some length the old style of
nurse, but I have not undertaken the unnecessary
task of describing the nurse of today and demon-
strating her superiority to the nurse of the past.
In order to do that I need only point to you and
say, as Daniel Webster said of Massachusetts,
“There she is—behold her and judge for your-
selves.”

THE TRAINED NURSE OF TODAY.*

BY

MISS N. RACHEL BRUCE,

Of the Graduating Class.

The care of the sick and afflicted has been
woman's work since the world began. The love,
devotion and temperament of woman seems
naturally to have fitted her for this noble profes-
sion in life. By the early religious bodies of the
past centuries, sickness and disease were looked
upon as true indications of sickness of the soul.
Science was then unheard of. Yet the love and
devotion of the true nursing spirit was present,
though not clothed in cuffs and collars, and due
reference was paid the tabernacle of the soul,
more than by the professional nurses of today.

A beautiful example in early times was that of
St. Elizabeth of Hungary, who unshrinking and
tender, confirmed the value of holy deeds in

place of holy meditation.

Until the reformation, English and all Euro-
pean hospitals were under the control of some
religious order.

In America the first training school for nurses,
was established in Boston in 1872 at the New
England Hospital for women and children.
Since that time the progress of trained nursing
in this country has been very rapid and we will
all appreciate this from some of the “Reminis-
cences” of Miss Linda Richard, who was the
first nurse to graduate from that institution. “In
those days, nurses went on duty at five-thirty in
the morning and did not leave the wards until
9 o'clock in the evening. Even then their work
was not done, for they were expected to remain
in their rooms, which were connected with the
wards and answer calls during the night.” I am
sure we have all felt the hours of duty long and
tiresome many times during the past three years.
However if Miss Richards could know that our
hours of duty were from seven in the morning
until 8 o'clock in the evening, with one hour off
each day for recreation, one afternoon a week in
which we can cast aside all hospital cares and
enjoy a good time if we so wish, our extra time
on holidays and Sundays, surely she would think
the evolution of training very great since her
time. But not alone in the hours of hospital
training has this evolution been so great, but
hand in hand with medical science the field of
nursing has widened correspondingly in the last
few years. In the beginning the only field for
graduate nurses was that of private work, ex-
cept for the very few who became superinten-
dents of training schools—or remained in charge
of wards. Suddenly as human progress goes,
this group of human commodities to which we
belong, finds itself in large, active and growing
social demand, and with the growth of that de-
mand, the relation of the several parties in in-
terest.

The process of the development of the trained
nurse has undergone a radical change. Trained
nursing has come to be regarded as a utility
which should be secured for all classes of people.
Its field is widening out beyond the lines of a
purely personal service within the broader range
of social service in many and varied forms. To-
day you will find us in the offices of physicians—
assisting in the care and ministering to the com-
forts of temporary patients and in the conduct
of private laboratories. We are becoming the
professional aid of the doctor in his daily duties.

*Address given at the graduating exercises at Mary
Fletcher Hospital.

We are found in the public schools. We reach the home of the children, and become the advisers of their parents in sanitation, and are definitely engaged in bringing the principles of preventive medicine within the reach of the practice of the people. We are employed in the great service agencies of the large cities of the country. The badge of the district nurse devoting herself to the sick and suffering in the homes of the poor, is no less a mark of honor, because it is becoming to be a common one. We are employed in the hospital service in the army and navy and in the Red Cross Society throughout the world. We are at work in the free clinics of the city dispensaries and are doing valuable duty in the social service departments of the large hospitals. Everywhere we are the effective agents of scientific medicine. We are putting principles into practice and are filling in the great gap between the laboratories of the school and the common life of the people.

Like that of medicine, nursing is no longer a privileged profession. It is a profession of privilege, but it is the privilege of service. It is a life of self-sacrifice and denial. I personally knew a nurse last winter who was doing district nursing in a rather large community, and who had at that time many sick patients to care for in widely scattered homes, with no car service to take her to their bedsides, and many miles she tramped in doing her unshrinking duties. At this time one of her sickest patients was a small boy of six years, with pneumonia, in a family of ignorant people. It was almost impossible to educate them to care for the sick child, and this nurse, although she was not called upon to do so, after her day's work was over, went to this home worked through the long hours of the night and cared for the boy during the crisis of the disease. She was repaid for her efforts in seeing the child rapidly restored to health. When I hear a person remark that a nurse is over paid for her work and that financial return is why she is in the profession, I beg to differ very much with that person, for I believe you will find in the profession of nursing today a very small percent who are there for the financial part alone. I believe no nurse could go through her three years' hospital training unless deep in her heart she had a real love for the work of ministering to the sick and suffering. For there are many vocations in life with much less work in which a girl is as well if not better paid than in the field of

nursing. And a true nurse must not only possess the love and devotion she gives to her work, but patience, tact, ingenuity and cheerfulness, which all go toward making her better fitted for the life she has chosen. We, I believe, more than any other class of people in the world, come in constant daily contact with the unpoetical side of human nature and we must therefore be able to meet the great demands upon our dispositions and characters. It was not science or technical skill that made Florence Nightingale a great nurse, for in this she was no better than many others. It lay in her patient, loving devotion to the sick and her intent and well balanced purpose to relieve their pain and sooth their suffering along the best lines the science of her time could direct and it is only when this devotion is found that the real spirit of the trained nurse can be said to be perpetuated. I believe a cheery disposition to be one of the great essentials of a nurse, for a smiling face is surely contagious, and the incubation period only a few moments before it has some one in its grasp. So we must be cheerful and smile—

“For the things that go the farthest
In making life worth while,
That costs the least and does the most
Is just a pleasant smile.

The smile that bubbles from the heart,
That loves its fellowmen,
Will drive away the clouds of gloom
And coax the sun again.

It's full of worth and goodness too—
With manly kindness bent;
It's worth a million dollars
And it doesn't cost a cent.”

I should feel remiss as a representative of this, the first class to hold graduating exercises, if I did not express to you the trustees and officers of the hospital, the lecturers and worthy members of our faculty, our appreciation of the splendid opportunities we have here had in preparation for our life work. Though we may wander far we will ever treasure our years here in training as among the brightest and best of our lives. Now that our training school days are over we must face the world in which we shall find greater responsibilities; responsibilities which will tax both the soul and the body. May God grant us strength and courage and in our hours of need be our counsel and guide.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

H. C. TINKHAM, M. D., }*Editors.*
B. H. STONE, M. D., }

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EDITORIAL.

We are publishing in this issue two addresses given at the first public graduation of nurses held at the Mary Fletcher Hospital. The hospital has had a training school for thirty years and nurses have been graduated during all this time—in two years during the first part of this and in three during the last—but never until this year has there been any public commencement exercises. When the hospital first began its work turning out women trained for the important work it was not only the first hospital in the state to conduct such a school but it was the first hospital in the state. The growth of hospitals everywhere during the period has been phenomenal and along with this has come the trained nurse, in the first place as a by-product but finally the most useful and helpful output. There can be no doubt that the trained nurse was needed. She as much as the hospital was the logical response to a definite need. Any one who has had one of these intelligent, cheerful and efficient trained nurses in the household during sickness can only wonder how the world

got along so long without her. Not only does she make the lot of the sick easier and less perilous but she brings a wonderful sense of relief to the anxious friends and relations and to the doctor, she is a veritable right hand. How firmly the profession has taken root is seen by the formation in so large a number of states of nurses' associations, the state regulation of the practice of nursing and finally the specialization of the nurse. We are coming to have the surgical nurse, the obstetrical nurse, etc. In this the profession has followed closely in the wake of the medical profession.

On July 2nd and 3rd the State Board of Health conducted the fourth meeting of its sixteenth annual school of instruction for health officers. The school this year has been conducted in four different localities, the health officers of the adjoining counties being required to attend the session held nearest them. The schools have been conducted in Bellows Falls, Rutland, St. Albans, and St. Johnsbury. It is one of the duties of the health officers to attend these schools when summoned, and the State pays his actual expenses and a fee of \$4.00 each day for the time which he spends in attendance. The result of these schools is that a body of men have been picked from the inhabitants of various towns, some physicians and some laymen and have received instruction along the lines of work which they are required to do in the discharge of their duties. If a health officer is conscientious and remains in office for a number of years, he should by attendance at these meetings become proficient in the various lines of his duties. The difficulty is that there are frequent changes and the instruction which one man has received at the expense of the state may be of no value by his retirement or discharge from office. The compensation of the health officer is so small that oftentimes, particularly in the case of a

physician, his work must be done at an actual financial loss to him. Under these conditions it is to be expected that the office would not be filled for any great length of time by any one man. But even with these difficulties, unquestionably the school of instruction has done much to maintain the health of the inhabitants of our various towns and villages and is well worth all it has cost.

NEWS ITEMS.

Dr. P. L. Dorey of Middlebury injured his arm quite severely while cranking his automobile June 6th.

The Boylan Anti-Drug Law which goes into effect in New York State, July 1st, makes it unlawful for physicians to issue prescriptions for drugs except after a physical examination and in the treatment of disease, injury or deformity and the prescription must be made out on the official forms furnished by the state. The doctor signing the prescription must affix his name in full, his office address and office hours and telephone number and the name, age and address of the person getting the prescription, with the date of issuance. It is unlawful for any person to fill the prescription without first verifying its authenticity by telephone or otherwise or for a person to have drugs in his possession without authority.

Criminal prosecutions for drug selling number 568 up to date this year, as against 450 for the whole of last year.

Dr. Myles Standish, Boston physician and ophthalmologist, has tendered his resignation as a member of the medical faculty at Harvard, and it has been accepted, the university board of overseers voting him the title of Professor Emeritus, beginning next September.

Dr. Standish has been at Harvard since 1886, with the exception of seven years spent at Dartmouth College. Since 1909 he has been Williams' professor of ophthalmology at Harvard.

Suit has been brought against Dr. John Hammond Bradshaw, of East Orange, N. J., for \$25,000 by a woman who alleges negligence in

performing an operation. According to the woman's testimony, on January 29th, 1913, Dr. Bradshaw performed an operation after he had been called into consultation by the family physician, Dr. Charles F. Abrahams of East Orange. It is alleged in the complaint that the operating table was placed so close to a steam radiator that during the operation the patient's hand rested on the radiator and was burned, unobserved by the doctors or nurses, while she was under the influence of an anesthetic. As a result of the burns this woman alleges the skin fell off in large pieces leaving the hand permanently injured.

Melvina Drakes won a verdict of \$2,500 from a Suffolk, Massachusetts jury, in her suit against George L. Tulloch, a dentist, for personal injuries from becoming infected as she alleges, by instruments used by the defendant. The alleged infection occurred in 1909. She sued for \$10,000.

Dr. G. S. Graham, assistant State Bacteriologist at Hanover, N. H., has accepted a position as bacteriologist at Birmingham.

Dr. Juber E. Pickering, Baltimore 1914, has located in Concord, N. H.

Dr. Harriman, University of Vermont, class of 1912, is about to open an office at Montpelier.

Dr. Coffee, class of 1913, University of Vermont, has just finished his hospital course at the Fanny Allen Hospital and opened an office at Montpelier.

Dr. E. A. Colton of Montpelier has given up active practice entirely. Hereafter his entire time will be given to the insurance business. Dr. Colton is assistant medical director of the National Life Insurance Company.

Dr. M. F. McGuire of Montpelier, has been out of practice for two weeks suffering from a very severe attack of tonsillitis.

The Medical Department of the University of Vermont graduated on June 15, a class of thirty-nine. Two of the fourth year class failed to graduate.

State Senator William J. Heffernan of Brooklyn will introduce at the next session of the New York Legislature a bill which, if passed, will drive from the markets of the State worthless disinfectants, of which huge quantities are sold yearly to unsuspecting New Yorkers.

Many Federal, State and municipal health officials, in widely separated sections of the United States, agree that serious harm to public health is being done, practically throughout the entire nation, because of the lack of laws standardizing and controlling disinfectants. Because of this lack it is declared that thousands of needless deaths occur annually.

Some officials are recorded as believing that disinfectant legislation is as important as pure food legislation. Yet at present no State except Maryland, so say those who have studied the situation, has brought the manufacture and sale of disinfectants under control, although in Mississippi it is planned to introduce a bill this year similar to the Heffernan bill.

Dr. C. E. Wells who has been doing orthopedic surgery in Burlington has accepted the position of assistant resident physician at the Boston City Hospital.

Rutland County Medical and Surgical Society held its annual meeting at Prospect House, Lake Bomoseen, Tuesday, July 14th, at 11 A. M., with the following program:—Reports, election of officers, new business, President's address, O. C. Baker, M. D.; Address, "The System of the Spinal Cord," George E. Price, M. D., Philadelphia, Pa. O. C. Baker, M. D., President; F. H. Gebhardt, M. D., Secretary.

DR. POND HEADS PHYSICIANS.

Dr. E. M. Pond of Rutland was recently elected president of the Rutland County Medical and Surgical Society, at the annual meeting at the Prospect hotel at Lake Bomoseen. There were 34 physicians present from all over the county. There was beside the annual address by the retiring president, Dr. O. C. Baker of Brandon, an address by Dr. George E. Price of Philadelphia, on "System Diseases of the Spinal Cord."

The following officers were elected: President, Dr. E. M. Pond of Rutland; vice-president, Dr. C. E. Griffin of Fair Haven; secretary and treas-

urer, Dr. F. H. Gebhardt of Rutland. The following were chosen as censors: Dr. M. R. Crain of Rutland, Dr. George D. Parkhurst of Fair Haven and Dr. J. W. Estabrook of Brandon.

Those elected for two years as delegates to the annual meeting of the Vermont State Medical Society were: Dr. J. J. Dervin of Poultney, Dr. C. B. Ross of West Rutland, Dr. J. S. Eastwood of Brandon. Dr. Gebhardt, Dr. E. J. Rogers of Pittsford were elected delegates for one year.

\$1,500,000 TO JOHNS HOPKINS.

Dr. Abraham Flexner of New York, representing the General Education Board founded by John D. Rockefeller, made final arrangements to turn over to Johns Hopkins Medical School the gift of \$1,500,000 to establish the William H. Welch Endowment for Clinical Education and Research. The fund will be turned over in less than two weeks in gilt edge securities, and by July Dr. Welch will be ready to begin work.

"The Johns Hopkins Medical School will receive \$1,500,000 in a lump sum," said Dr. Flexner, "and not in installments as has been the custom."

"The Johns Hopkins Medical School is the first medical institution in the country to receive money for research work from the General Education Board, but in the last two weeks it has been decided to give \$750,000 to the Washington University at St. Louis and \$500,000 to Yale University."

Painting the palates of inveterate cigarette users is the latest device for curing a habit responsible for much deterioration of character among young men. This novel method was recently employed by a city official of Hoboken, N. J. A preparation of nitrate of silver, administered by a physician, was applied to the palates of a group of boys and young men who presented themselves for treatment. This was supplemented by a prescription providing a wash of the same liquid to be made use of after meals or when the desire for a smoke became insistent. The result expected is a nauseating revulsion against tobacco. In this case, as in many others, an ounce of prevention is worth a pound of cure.

FIND FOCUS OF PLAGUE.

The real focus of bubonic plague infection was revealed July 1 by W. W. Wilkinson, now at an isolation camp here undergoing treatment for the malady. It is six blocks from what had been supposed to be the focus. The health authorities began work at once in the new territory.

Wilkinson told Dr. Oscar Dowling, President of the State Board of Health, that he had been bitten by fleas while at the warehouse of the Volunteers of America, on Gird Street. He was lodging when stricken at the industrial home of the organization on St. Joseph Street, as was Charles Lunder, the Swedish sailor, who died on Sunday from the plague. The warehouse is used for storing waste papers, old clothes, and other articles gathered by the Volunteers' workers.

The health officers promptly established a quarantine for one block in every direction from the warehouse and built a barrier to prevent the escape of rats. The building was rat proof and its contents were burned in the streets. Surgeon General Rupert Blue of the Public Health Service will arrive here July 2, when further plans will be made to stamp out the disease.

The quarantine on the district previously suspected was abandoned June 30 on the advice of the Federal authorities as unnecessary under the circumstances.

November 9th the centenary of the discovery of iodine was celebrated. It was in November, 1813, that Bernard Courtois, who was born February 15, 1777, at Dijon, France, read before the Académie des Sciences a note entitled, "Discovery of a New Substance in Sea-Wrack." Many scientific and medical men of prominence went to Dijon to take part in the celebration. A commemorative tablet was placed on the house in which Courtois was born. Afterward a session was held in the hall of the Académie de Dijon, when Camille Matignon, professor of inorganic chemistry at the College of France, read an interesting paper on the discovery of iodine.

Sir James Crichton Browne, speaking in London at the annual meeting of the National League for Physical Education and Improvement, urged the importance of grappling with the "greatest catastrophe that could befall the world—the de-

cadence and deterioration of the British race." He declared that in the large public schools of that country today it would be impossible to find ten absolutely sound children.

Nebraska has proposed what seems to be a rational solution of the problem of supplying medical schools the world over with ample anatomic material. There will be a State Morgue to which will go all bodies unclaimed by relatives within its borders. After a definite period these may then be distributed to medical schools within that commonwealth.

Dr. Dubard, of Dijon, France, has, it appears, invented an antiseptic varnish, which is to supersede the use of operating gloves by surgeons. The operator, after washing his hands with soap and then in alcohol, steeps them in a mixture composed of essence of juniper berries and an alcoholized solution of menthol. The evaporation of this mixture, which takes place rapidly, leaves a sort of protecting and antiseptic varnish behind. Unlike the operating glove, the varnish in no way affects the surgeon's delicacy of touch.

Great Britain has just named a commission for study of venereal diseases.

The important discovery by Dr. Alexis Carrell, of Rockefeller Institute, that *alpha* rays of radium (contrary to the old view of their supposed harmful local action) are of great value in treatment of cancer, was announced by Dr. Robert Abbe at the meeting in New York, February 17th, of the Radium Institute of America.

ANTIVACCINATION BILL DEFEATED IN MASSACHUSETTS.

The antivaccination bill, introduced into the Massachusetts legislature recently, was defeated in the House on May 14th by a vote of 133 to 53. As the measure had been approved by the Senate, by a vote of 25 to 9, its sponsors had great expectations of victory. Dr. E. H. Bigelow led the fight in the House. He made the principal speech, and by exhibiting pictures and charts showing the effects of smallpox, convinced the members of the advantages of vaccination. The replies of the State Board of Health to the series of questions suggested by Representative Chamberlain, of Springfield, were also very effective.

CIVIL SERVICE EXAMINATIONS FOR BACTERIOLOGIST AND ASSISTANT EPIDEMIOLOGIST.

The United States Civil Service Commission announces an open competitive examination for bacteriologist, for men only, on July 8, 1914. From the list of eligible persons resulting from this examination certification will be made to fill vacancies in this position at salaries ranging from \$1,200 to \$2,000 a year, in the Bureau of Chemistry, Department of Agriculture, for duty both in Washington, D. C., and in the field. The duties of this position will be to examine bacteriologically food products which are subject to the food and drugs act, in order to determine their sanitary condition. An educational training equivalent to that required for a bachelor's degree for an M. D. degree from a college or university of recognized standing, including at least two years' training in bacteriology, is a prerequisite for consideration for this position. Persons who desire to take this examination should apply at once for application Form 1312.

An open competitive examination is also announced for assistant epidemiologist, for men only. From the list of eligible persons resulting from the examination certification will be made to fill vacancies in this position in the United States Public Health Service, at salaries ranging from \$2,000 to \$2,500 a year. The duties of this position will be to conduct laboratory studies of disease, to make epidemiological surveys, to determine the prevalence and causation of epidemics, and to recommend measures to prevent and control outbreaks of disease. Applications must be filed with the Civil Service Commission on or before July 6th.

A NEW DEPARTMENT IN THE UNIVERSITY OF CHICAGO.

A department of hygiene and bacteriology has been established at the University of Chicago. Dr. Edwin O. Jordan, professor of bacteriology, is head of the department, and associated with him are Dr. Norman MacLeod Harris and Dr. Paul G. Heinemann. The work in bacteriology was formerly included in the department of pathology and bacteriology, which now becomes the department of pathology, with Professor Ludwig Hektoen as head. During the present term Dr. William Buchanan Wherry, associate

professor of bacteriology in the University of Cincinnati, is giving courses in advanced bacteriology and parasitology.

The yacht harbor on the water-front of the Panama-Pacific international exposition is about five acres in area and has such ample and convenient docking facilities that coastwise steamers and other craft, sometimes six or seven at a time, use it daily, discharging building material.

The work of transplanting trees from the nurseries to the Panama-Pacific international exposition grounds has commenced. The first to be planted were some acacias, pines and cypress, which were put in the large grassy park on the esplanade of the Marina, abreast of the Palace of Mines and Metallurgy. The work of transplanting will be prosecuted actively.—*Western Med. Review.*

Six thousand nurses, from every nation of the world will assemble in San Francisco during the Panama-Pacific International Exposition. Four nurses' congresses have accepted the formal invitation of the exposition officials to their conventions in San Francisco during the exposition. They are the International Associations of Nurses, the American Nurses' Association, the Organization of Public Health Nurses, and the National League of Nurse Education.

Dr. Creighton Wellman, in the *American Journal of Tropical Diseases and Preventive Medicine* for December last, says that it is not generally known that the extensive use is made of our knowledge of tropical diseases by the medical missions in various parts of the world. He says also that these missions accomplish some of the best research in these diseases, in addition to teaching and applying scientific medicine among people who would otherwise be debarred from its benefits. In China it is said that there are over five hundred men and women engaged in the conduct of hospitals and dispensaries. The China Medical Mission Association meets triennially for the exchange of opinions and to make announcements of the results of research, and a bimonthly medical journal has been published for many years for the exchange of ideas

in this field. A research committee has been formed and a large amount of valuable work has been done in the investigation of nematodes, trematodes, cestodes, and the bacterial affections common to that part of the world, plague, cholera, typhus and other affections. Wellman says that more physicians and nurses are needed, and that to young men with the missionary spirit no more attractive field of endeavor could be found than that of China, Africa or India.—*Jr. A. M. A.*, Jan 17, 1914.

THE NEW DRESS OF THE ANNALS OF SURGERY.

Owing to the continually increasing amount of material of value, offering for publication in the *Annals of Surgery*, the publishers have found it necessary beginning with the July, 1914 issue to enlarge the size of the page and also to somewhat reduce the size of type in which the original contributions have heretofore been printed. The enlarged size will also enable the publishers to make a better display of the illustrations which are such an important feature of the *Annals'* contributions.

Thirty years ago, when the first number of the *Annals of Surgery* appeared, the size and style then shown suited admirably. At that time a single number contained only 96 pages. They have continued to increase each year until now the average number of pages to an issue is 164. Special issues have been published in which the number has been increased to over 300 pages, with the result that the manufacturing of the Journal in the former style is not only extremely difficult but the finished product is unwieldy and cannot be read with the ease and comfort which is due a subscriber. In fact, it required constant pressure on the pages to keep them open.

We believe the new form overcomes this inconvenience and enables the publishers to give the reader more material and greater comfort while reading than it could have been possible for them to present in the former size.

The July issue has a choice collection of important articles of exceptional value to the general practitioner as well as the surgeon. It is a splendid example of the way this publication continues to set the pace in Surgery.

Long Island College Hospital, Brooklyn, has undergone complete reorganization in order to

meet the modern requirements of teaching medicine. It has instituted a five-year course to take effect in September of this year, and has arranged to add over twenty full-time members to its faculty and every department has been increased. The junior year will be given over to dispensary work and didactic medicine and surgery, and the senior year will be devoted entirely to bedside work in the hospital owned by the college, which, with the new addition, will give the institution 560 beds and make it one of the largest in Greater New York.

The following gentlemen will occupy the new positions on the faculty:—

Dr. Archibald Murray, Professor of Pathology; Dr. William Lintz, Professor of Bacteriology; Dr. John C. Cardwell, Professor of Physiology and Pharmacology; Dr. Matthew Steel, Professor of Chemistry; Dr. William Francis Campbell, Professor of Surgery; Dr. William B. Brinsmade, Professor of Clinical Surgery; Dr. Joshua M. Van Cott, Professor of Clinical Medicine; Dr. E. H. Bartley, Professor of Pediatrics.

DR. H. S. BIRKETT'S APPOINTMENT.

Dr. Herbert S. Birkett has been appointed Dean of the Medical Faculty of McGill University in place of Dr. F. J. Shepherd, who has resigned. Dr. Birkett is an ex-President and a member of the Council of the American Laryngological Society, and also belongs to the American Association of Anatomists. He has been President of the Montreal Medico-Chirurgical Society and Vice-President of the section of laryngology and otology of the British Medical Association, and he has been prominently connected with the development of the Medical Corps in connection with the Canadian Militia.

Dr. Alexis Carrel, of the Rockefeller Institute of Medical Research, in an address before the Rush Society and students of the University of Pennsylvania Medical School in Philadelphia, April 1st, described experiments in which he has taken connective tissues from the bodies of animals and kept them living for nearly four years. Such tissues, he declared, can be kept alive for an indefinite time, outside the organism, under the influence of mechanical and chemical stimuli.

For the treatment of gastro-intestinal diseases.

To the **Bacillus Bulgaricus** is attributed the power of displacing the objectionable putrefactive organisms of the colon. Taken internally it multiplies and produces quantities of lactic acid, which obstructs the growth of harmful micro-organisms, preventing diseases caused by the absorption of the products of putrefaction and butyric fermentation.



Bacillus Bulgaricus, in the form of tablets, such as we manufacture, has produced good results in diseases due to intestinal autointoxication. It has been noticeably successful in the vomiting and diarrheas of infants.

Let us send you a descriptive circular.

TABLETS BACILLUS BULGARICUS: vials of 25.



For prompt astringent, sedative effect upon the lining membrane of the alimentary canal there is no preparation of bismuth that equals the hydrated oxide suspended in water, as presented in **Milk of Bismuth, P. D. & Co.**, a palatable product, each fluidrachm representing the bismuth equivalent of five grains of bismuth subnitrate.

Milk of Bismuth, P. D. & Co., is indicated in acute and chronic gastritis, enterocolitis, the diarrheas of typhoid and tuberculosis, dysentery, summer diarrhea of infants, gastric ulcer—in fact, wherever there is evidence of inflammation or bacterial infection of the gastro-intestinal tract. It is free from any trace of arsenic or other impurities and may be prescribed with full confidence that it will agree with the most sensitive stomach.

MILK OF BISMUTH: pint, 5-pint and gallon bottles.



Home Offices and Laboratories,
Detroit, Michigan.

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BOOK REVIEWS.

A TREATISE ON DISEASES OF THE SKIN—For the use of advanced students and practitioners.—By Henry W. Stelwagon, M. D., Ph. D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Seventh edition, thoroughly revised. Octavo of 1,250 pages, with 334 text-illustrations, and 33 full-page colored and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

The seventh edition of this classic is a thorough one. Much of the text is rewritten. The work is too well known to need any general review. The call for a seventh edition attests its popularity.

MEDICAL GYNECOLOGY.—By S. Wyllis Bandler, M. D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Third thoroughly revised edition. Octavo of 790 pages, with 150 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

A book dealing with the nonoperative side of gynecology will be welcomed by a large number of physicians whose practice does not include surgery. This work is exhaustive in its completeness. The third edition of which this is an announcement, adds much needed material, particularly on the importance of the internal secretions.

HISTORY OF MEDICINE—With Medical Chronology, Bibliographic Data, and Test Questions.—By Fielding H. Garrison, A. B., M. D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C., Editor of the "Index Medicus." Octavo of 763 pages, many portraits. W. B. Saunders Company, Philadelphia and London, 1913. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

Your reviewer welcomes this volume as must all students of medicine in its broader aspect. Our profession pays too little attention to the wonderful mind of the past, to whom we are so largely indebted. This book should stimulate a profounder knowledge of medicine and medical history.

CLINICAL HEMATOLOGY—An Introduction to the Clinical Study of the So-called Blood Diseases and of Allied Disorders.—By Gordon R. Ward, M. D., Fellow of the Royal Society of Medicine, Medical Society of London, etc. Octavo of 394 pages, illus-

trated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.50 net.

This volume is primarily concerned with the clinical study of the so-called blood diseases. Most of the works on the subject of the blood diseases has been in reference to their pathology. It is well that the author has attacked the subject from a different angle.

PSYCHANALYSIS—Its Theories and Practical Application.—By A. A. Brill, Ph. B., M. D., Chief of Clinic of Psychiatry and Clinical Assistant in Neurology, Columbia University Medical School; Chief of the Neurological Department of the Bronx Hospital and Dispensary. Second edition, thoroughly revised. Octavo of 393 pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.00 net.

The appearance of the first volume of this work created quite a sensation among neurologists and short story writers. It is an interesting subject and the author deserves great credit for his originality. Two new chapters have been added to the book.

PRACTICAL SANITATION—A Handbook for Health Officers and Practitioners of Medicine.—By Fletcher Gardner, M. D., Capt. Medical Corps, Indiana National Guard; Health Commissioner of Monroe County Indiana, and—James Persons Simonds, B. A., M. D., Professor of Preventive Medicine and Bacteriology, Medical Department, University of Texas. Illustrated. C. V. Mosley Company, St. Louis, 1914.

This book, written by a practical sanitarian and a teacher of preventive medicine will be welcomed by every health official in the country and should be in the library of every practitioner, be he a health officer or not.

CLINICAL DIAGNOSIS AND URANALYSIS.—By James R. Arneill, A. B., M. D., Professor of Medicine and Clinical Medicine in the University of Colorado, and Physician to the Denver County Hospital and the St. Joseph and St. Luke's Hospitals of Denver. New (2d) edition, revised and enlarged. 12mo., 270 pages, with 83 engravings and a colored plate. Cloth, \$1.00 net. *The Medical Epitome Series.* Lea & Febiger, publishers, Philadelphia and New York, 1914.

This epitome in its 270 pages contains a fund of information on the subject it treats, arranged in a manner to make it extremely useful in crystallizing impressions recovered in study of larger works in refreshing the memory. After each chapter is a list of questions covering the important points treated. A valuable little volume.

DISEASES OF THE HEART.—By John Cowan, D. Sc., M. D., F. R. F. P. S., Professor of Medicine, Anderson's College Medical School; Physician, Royal Infirmary; Lecturer in Clinical Medicine in the University of Glasgow; Examiner in Medicine, Royal Army Medical College. Octavo, 458 pages, with 199 illustrations. Cloth, \$4.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This work will be found of great value by every physician and surgeon who has access to it. It presents the most recent knowledge of the heart and its pathology gathered by the use of all the new methods of examination of the organ in the dead and the living. It is especially good in detailing the best method of handling heart cases.

The book is based largely upon the author's personal experience, though the best recent literature has also been carefully studied. Two of the chapters, upon special subjects, have been written by authorities in their particular fields. The illustrations are numerous, excellent and nearly all original.

ANATOMY AND PHYSIOLOGY—A Text-Book for Nurses.—By John Forsyth Little, M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. 12mo., 483 pages, with 149 engravings and 4 plates. Cloth, \$1.75 net. *The Nurses' Text-Book Series.* Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This concise work presents all the essential points of anatomy and physiology, which the nurse must have at command for the proper comprehension of her professional duties. The author's style is clear and untechnical, and no theories have been included except those which have been definitely accepted by teachers of these subjects. Emphasis has been placed on the descriptions of organs and their functions which are of fundamental importance in the practical work of the nurse. The volume is extremely



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well organized, and the judicious use of heavy-faced type brings out in their proper relations the various headings and sub-heads according to their importance. The illustrations are very unusual in their excellence; many of them are taken from Gray's Anatomy, and these have the names of the parts engraved directly on the face of the cut, so that each part, its relations and extent are manifest at a glance. At the end of each chapter there is a list of questions which serves to impress upon the mind the salient points in that chapter. At the end of the book there is a table of weights and measures, a full glossary, and an admirable index. This work stands alone in its efficiency as a teaching instrument in the nursing field.

THE JUNIOR NURSE.—By Charlotte A. Brown, R. N., Instructor in the Boston City Hospital; Graduate of the Boston City Hospital and Boston Lying-in Hospital Training Schools for Nurses; late Superintendent of the Hartford Hospital Training School, Hartford, Conn. 12mo., 208 pages, illustrated. Cloth, \$1.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This little volume is intended for the beginner and deals with these matters which a junior nurse should know, in a delightfully clear and simple manner. It contains much which could be read with profit by any housewife who is sometimes called upon to perform the more simple duties of nursing.

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*New York Medical Journal, July 4, 1914.

† A preliminary report read before the meeting of the Pennsylvania Dental Association, June 30, 1914.

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were resorted to. Radium was the most active substance known, and it was proved that it had a definite action on living cells. In cancer it had been found to exert a definite action either by destroying the cancer-cells or by retarding or preventing their growth. The properties of radium were comparatively little known, and therefore radium treatment was in the experimental stage, in which attempts were being made to fathom its effects on disease, especially cancer, to estimate its dosage, and to classify what cases were suitable for treatment by it. That would mean some years of work, and it would, therefore, be well if silence could be maintained on the subject for the next two years until some definite announcement could be made. A definite pronouncement with regard to research might be awaited with confidence, as the radium research work in this country was being carried on systematically. There was an enormous field for research and treatment among the patients at that hospital, but the workers were hampered by the inadequate quantity of radium at their disposal and their inability to procure more owing to its scarcity and enormous cost.



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Vermont Medical Monthly.

VOL. XX.

AUGUST 15, 1914.

NUMBER 7.

ORIGINAL ARTICLES.

CONCERNING COMMUNICABLE DISEASES AND THEIR MANAGEMENT.

BY

WILLIAM P. NORTHRUP, M. D.,

Prof. Diseases of Children, N. Y. Univ. & Bellevue Hospital Medical College; Visiting Physician to Presbyterian Hospital; Consulting Physician to the Hospitals of the Health Department, New York.

Communicable diseases are infectious diseases incited each by its own specific agent. We will with your permission relegate the term "contagious" to the dust heap where it will find awaiting, the kindred term "miasm."

Disease is a process. Disease is an adaptive reaction of the body cells in the presence of an invading agent. An infection, a disease, a process, reaction cannot be transported and communicated; the *infective agent can*. Let us then put our attention on the germ, the infective agent or as some of my working mates express it—"Keep your eye on the bug."

Skin eruptions, throat lesions, fever, vomiting, cough are manifest expressions occurring in the course of the disease. They are the results of infection and constitute the signs and symptoms of the characteristic process, reaction of the body cells to the specific infective agent; one group of characteristic reactions we dominate is measles, another scarlet fever, diphtheria, and so on.

It is the present day interest to note where the agent hides (seed, microorganism, spore), how it is transported, where it finds proper soil to grow and multiply. We must have at least a working hypothesis before we can successfully combat it. The laboratory has not yet identified the specific agent of measles or scarlet fever, but the fight is on; we must apply our minds to the unknown germ. "Keep your eye on the bug."

The communicable diseases to be here, today

considered, are those most readily communicated and those most common in childhood, in our every day practice.

In the first class I would place MEASLES—in a class all by itself.

In the second class put all the other common diseases—readily communicable—still speaking of childhood. Whooping cough; I am at a loss to know where it belongs, just between these two classes, perhaps.

During all my hospital life I have kept up a running fight with these enemies. In the fighting I have served in campaigns in Riverside Hospital, North Brother Island, in Willard Parker Hospital, Foundling Hospital, Presbyterian Hospital. As an old campaigner of 25 years standing I will say the fight against measles is guerilla warfare. The fight against small pox and diphtheria is won with machine guns. Whatever we may wish to call it, a fight it is all the same.

Several years ago, when Dr. A. H. Doty was Quarantine Officer to the Port of New York, as Consulting Pediatrician to his service, I became more than usually interested in the common communicable diseases of children. Adding the long experience of Dr. Doty's to my own perhaps justifies me in setting forth his and my views in this paper.

Measles is the most readily communicable of all the common diseases and well nigh a scourge. Nearly all mankind are susceptible, in all grades of social scale, the well nourished, the ill. The death rate is considerable in proportion to the hygienic care and surroundings of the people. The Indian in his tepee, the infant in a large institution, soldiers in barracks, prisoners in jail, find this disease in the front rank in fatalities.

What have we to say for the modern consideration of this disease? We do not know the infective agent; we assume that it is an infinitely small microorganism, small even for the modern microscopic possibilities; we believe that it is communicated through the air borne secretions of the mouth and nose by coughing and sneezing.

We believe that it is immediate and but very rarely through conveyance on fabrics. We believe that the so-called striking distance of the means of transportation—viz.: coughing and sneezing, is perhaps three to five feet in a still atmosphere. Knowing this much we are yet at a loss to account for the many mysterious cases. The only answer to many questions that might be asked in this connection is that the period in which the infective agent may be passed to another begins earlier than previously considered. At one time the period was thought to be up to the appearance of the eruption on the skin surface. Now we date the period up to the appearance of the eruption on the mucous membranes. One step more and we now shorten the period from fourteen days to eleven, then again suspect that it may be one or two days less. There is the explanation of the mysterious appearance of measles from unsuspected sources. It is communicated by means of "carriers."

WHOOPIING COUGH. Nothing has recently been added to our knowledge in this disease unless it be the somewhat uncertain feature of diagnosis, viz.: a lymphocytosis in the period in which the cough is still of that uncertain behavior in which it is impossible to tell what it will be eventually. Some find it useful, others think it not worth while. The pathologists have added something to the picture of the lesion—the stuffing of the ciliae of the ciliated epithelium of the trachea with the spores of the Bordet and Gangou bacilli.

I do not consider this disease nearly so communicable as measles. On the other hand the dangers in connection with the complications are to be more and more appreciated. In the aged, for they frequently have the disease the exhaustion of the paroxysms prove frequently fatal. The aged President of our hospital, in a family where there were no children acquired the disease and died during the active symptoms of whooping cough. Each year of my experience with these two diseases leads me to appreciate their dangers more and more. As I prepare these notes I have constantly in mind the problem of keeping out of my hospital service these two most readily communicable diseases; all other threatening enemies are unimportant in comparison.

Though measles is the more readily communicable and the greater scourge in many ways, it still may be grouped in the consideration

which we now have in mind. We believe these two diseases are communicated through direct transmission of the infective material of warm, moist, mucous surfaces, from one person to another. It is commonly transmitted through kissing, coughing and sneezing, in contact or in near approach. We do not believe it is air-borne, transmitted on fabrics or fingers, or, if so, in such a small part of one per cent. as to make it of little moment. I am putting these statements rather strong; they are my own personal convictions and are not to be considered as involving my colleagues in any controversy to which this discussion may give rise. In fact I am not quite sure but some would contradict me here and now. They objected when I put babies on the roof in the treatment of pneumonia. They have recovered from that innovation and they may live to recover from this. In the fresh air treatment I had no friendly arm on which to lean; in this I have had the help of Dr. A. M. Doty and the indulgence of Health Officer, Dr. H. M. Biggs.

I began with measles and whooping cough; it was with the desire to dispose of them as they are beyond my power to cope, in the least. Until the research workers identify the infective agent, whether it be microorganism so infinitely small as to be beyond the best powers of the microscope or protozoan, there is little prospect of controlling them by ordinary remedial measures.

DIPHTHERIA. The treatment is so effective as to place this among the preventible diseases. Antitoxin has robbed it of its terrors—literally. There are two features of this disease to which I will later refer—carriers and methods of transportation of the agent.

CARRIERS. Here we come to the very focus of the examination. The carriers of diphtheria are easily studied. The mysterious cases are now believed to be due to the presence in the throats of seemingly healthy persons of the virulent bacillus.

It is my personal belief that the carrier of measles is in danger also. A carrier may or may not, at any time, acquire the disease and may at any time contribute its carried germ to infect another susceptible person, or make the other a carrier and so on. The same is true of scarlet fever and the minor diseases of which we have spoken.

At the present time we have in the wards of the Presbyterian Hospital cribs surrounded by

screens; these are not to keep germs out as some have facetiously remarked, but to keep children out; not to keep germs from the children but to keep the children from the germs.

I was once pronounced to be doing a wicked and criminal thing in keeping diphtheria in the ward with presumably healthy (surgical) children. To meet this I took the authorities into confidence and carried the experiment to a finish. There have been something like twelve or more cases of diphtheria thus treated in the wards. Let us remember that it usually requires repeated implantations of an abundant supply of a virulent microorganism upon a susceptible soil to effect an inoculation.

We have thus treated typhoid behind a screen, convalescents ailing from scarlet fever, whooping cough, influenza, etc. It is not human to send operative cases to another hospital where they cannot have treatment for their wounds as well as for their disease. If a case of appendicitis comes and has the emergency operation we cannot send the patient to another hospital. The same is true of empyema operated upon in emergency.

TREATMENT. What recommendations have we to make in the treatment? First of all remember the probable hiding place of the germ. A warm, moist nest is the place to look for favoring soil for the growth of the seed. The usual culture tube of the laboratory is an artificial throat. It is a glass throat lined with a gelatinous, artificial mucous membrane, moist and it lacks one thing—it must be warm. It is placed in an incubator, before the germ will grow. We must keep our minds fixed on the germ.

How is the germ to get out of this mucous-lined human throat? We cease to think of the diphtheria bacillus escaping from the damp of the sewer opening and aviating through the thick miasms of the night air. These words sound strange to our ears at this day: But the germs can aviate—to use the new language of the recent inventions. Their radius of operation is however, limited; it is limited to the carrying power of a cough and a sneeze, better in still air, in the ideal conditions of a stuffy, inside room, we may perhaps prefer to liken the action to a rocket. Germ aviation is extremely difficult and well-nigh fatal to the flyer in the swirling atmosphere of the out-door air.

I am told by the expert laboratory men that drying, exposing to sunlit air, drifting fresh air, are near-fatal to the throat germ that loses its way in flight from one moist warm mucous membrane to another. It must have all things favorable; it must not dry; it must not get chilled; it must not go without food and drink; it must go immediately from one soil to another; it must be transplanted promptly and properly from one favorable soil to another favorable soil.

Someone may raise the question, why does the child escape at one time and succumb at another? Of course the answer is that the child is at one time susceptible and at another is not. There is another question that the laity will ask—Why does not a doctor contract these diseases? The answer is—they do. But that will not satisfy the layman. The real answer is that his exposure is so short and he immediately goes out into the fresh air and the fresh air induces an increase of mucous secretions which either remove the infective agent mechanically or aid in destroying its vitality. There are numerous elements connected with the mechanism of body protection that are brought into play—such as possibly a change in reaction of the superficial secretions. An important feature of the process of infection is what we may call the dosage of the infective material. There is so much peril in aviation, in the transit of the germ from one to another, from host to host, from host to victim, that it requires a vast amount of infective germs, a huge dose, or it requires a very susceptible soil. A particularly virulent germ, a particularly susceptible soil, a particularly large dose, or repeated frequent small doses, as you see, furnish a large number of variants. So the doctor, in health may acquire an infective agent and become in turn its host. The answer to the layman is that the doctor does get diphtheria, he does get scarlet fever, etc. One thing more about the doctor—he may be in perfect health and acquire a new specimen in the flora already abundant, in his throat. He may then become a carrier. That is his throat becomes a culture tube in which like the glass tube in the warm chamber of the laboratory, the germs grow but the poisons generated in their growth are not absorbed, that is, the doctor is a germ carrier but has not diphtheria.

Avoid coughing into the atmosphere. If one

coughs or sneezes into a winter atmosphere or into a strong beam of light, one sees that a fine spray is thrown out with force; if a mirror is the target one sees that a number of fine droplets are planted on the glass and after the dew has evaporated from the glass the droplets remain. If these droplets are caught in a Petri plate there grows a colony where each droplet has landed. Here is the demonstrable implantation of seed on a favorable soil.

The time is surely and rapidly coming when it will be bad form to boom out into the common atmosphere, that reverberating cough and sneeze, unchecked, to spray one's neighbor with the secretions of the throat, which throat may be at the same time a culture tube for pathogenic germs. It is not so long ago that the red bandana handkerchief waving before the face was a signal of the forthcoming heroic blast of the nose; our grandfathers cultivated the bugle-blast as an accomplishment.

When you see a neighbor in a crowded vehicle put his head back, draw in a long breath and prepare for a first class booming cough straight at you, dodge; pretty soon it will be common knowledge that this is the way germs are fired at friend and foe. Let the school children once get this into their heads and I fancy they will round up the adult family at home. It is becoming known that there is no vehicle of information so arriving, no force so coercive as the school child. A little girl who reaches home with a fixed idea in her head is bursting to impart it. Woe betide the father who sneezes on the baby thereafter.

Disinfection. Strong soap and hot water are the best; fumigation is of little avail; wash all up-looking surfaces, boil the fabrics. Air the mattress and pillows.

Personal Disinfection. Washing with soap and hot water; the hot bath.

Hands. The importance of this cannot be overestimated. Hot water and strong soap are beyond all else the most valuable. It is told us by the bacteriologists that to disinfect the hands in a solution of bichloride would require an hour.

Throat Disinfection. Prolonged gargling with boric acid solution seems to me to be the best. To sterilize the throat with strong alcohol would require you to hold the alcohol in the throat five

minutes. Ordinary table salt liquifies the mucus, facilitating its mechanical removal and is slightly antiseptic.

Two things seem to appeal to the senses—it is not well to roughen the skin of the hands with strong antiseptics; it is not well to irritate the throat with fierce gargles. Gentle cleansing—I am speaking from children's practice—accomplishes the most good.

The microorganisms, germs, spores or what not the causative agent of the diseases which here interest us may exist extracorporeally but to so slight a degree are they a menace to the human family as to be practically negligible—a part of a per cent., perhaps.

It is too easy to be dogmatic, especially if one has strong convictions. Let us clear our conscience then by claiming that the facts following may be but about 98% true.

There is no danger from the scales of scarlet fever—they are dead material.

Measles, scarlet fever, whooping cough are communicated by coughing, sneezing, kissing, in other words through the transported droplets from the nose and mouth of infected persons.

The most common infective microorganisms perish quickly in drying, in the air, perhaps a fraction of one per cent. surviving in an enfeebled condition.

"Keep your eye on the bug" as one of my impertinent friends puts it. It lives in the warm, moist cavity, may be propelled like a rocket to a distance in a thick mass of mucus and survive in a moribund state for a variable time. It quickly succumbs if the warmth and moisture are not there.

Microorganisms are coughed, sneezed, kissed, wiped, carefully and quickly transported from host to victim.

"Cough and wipe diseases." "Keep your eye on the bug."

In brief then it amounts to this:

Smallpox is manageable—completely—by vaccination.

Diphtheria is theoretically but not thus far practically manageable by prophylaxis and treatment by diphtheria antitoxin.

Scarlet fever is not extremely communicable; compared with measles and smallpox, is easily quarantined, is not a serious menace in a ward.

Whooping cough is communicable in a still

atmosphere in near approach, by contact as in kissing, but by far more from coughing and sneezing, probably not communicable either by fabrics or in the outdoor atmosphere except in more than ordinary approach and prolonged and frequent contact. It is conceivable that young children by excessive kissing may break all customary rules. It would constitute an exception.

German measles is so mild as to be of little menace to a community or family. Its chief interest is its likeness to measles and the danger of mistaking one for the other during epidemics. The buccal spots (Koplik's) serve to differentiate them pretty surely.

Mumps and chicken-pox need not detain us; they are mild and not readily mistaken one for the other. If it be remembered that "Chicken-pox comes in crops" (Odwyer) the mistake will rarely occur.

The final word is that with which we began:
 Measles is the captain of the band;
 Eternal vigilance is the price of immunity;
 Watch the buccal mucous membrane;
 "Keep your eye on the bug."

TONSILS:—A SAFE GUARD OR A MENACE?*

BY

JAS. M. HAMILTON, M. D.,
 Rutland, Vt.

Mr. President and Gentlemen:

In former years tonsillitis or angina tonsilaris—which title covered all the diseases occurring in that region—was called one of the mild affections and given only passing consideration.

If this paper were to be at all pretentious it should take up the discussion of all three groups of lymphoid tissue that constitute the ring of Waldeyer. The hyperplasia of the pharyngeal tonsil in the baby and young child demand your attention in patients of that age just as hypertrophy of the lingual tonsils does in patients of well advanced years. Our study will be limited to the faucial tonsils.

The period when the faucial tonsils are most troublesome is variously stated, but we see more

cases from 5 years of age to the age of full development at about 25 to 30.

There are no diseases of more importance to us as general practitioners than those originating in the tonsils, especially as regards their sequelae. Not only do we come in contact almost daily with cases in which the tonsils are frankly involved with the original site of entrance of the infecting organism, but a great many cases are seen in which the role of the tonsils is far less evident, as for example, rheumatic arthritis, coming on from 5 to 15 days after some slight and possibly overlooked attack of tonsillitis; pleurisy at a considerable later date; or the involvement of the cervical lymphatics. Their very location and anatomy place the tonsils among the most vulnerable points of attack by our heredity enemies, the pathogenic bacteria. Situated in the fauces between the pillars, normally they do not protrude beyond their inner margins, yet most patients at the age of tonsillar activity, show them well beyond these limits and not infrequently nearly in coaptation at the median line of the throat. So they are well out into the path of material destined for the esophagus and into the current of air of the mouth breather or of the child breathing normally through the nares. Again, they are so situated that any material being expectorated from the lungs bathes their mucous surfaces and sweeps by the orifices of the crypts.

A tonsil is composed of a mass of lymphoid cells, similar to those of the Beyer's patches of the intestine. Into this mass of cells run ten or fifteen crypts, lined with a continuation of the faucial and oral mucous membrane. This remembrance secretes into the crypts and the mucus is mixed with the exfoliated epithelium and if not promptly expelled forms those cheesy foul smelling plugs that frequently make the breath so offensive. Someone has said that the act of swallowing aids in the expulsion of these masses and that for this reason the breath of the faster is often so offensive.

Each attack of tonsillitis makes the crypts larger and deeper until often the tonsils seem to be small sponges with their many gaping orifices that are the best possible incubators for bacteria. The principal requisites for the growth of bacteria pathogenic to the human body are moisture, heat, darkness, body temperature and a

*Read before the Orleans County Medical Society.

proper culture medium. No bacterium then could demand a more salubrious location for its growth and development than the crypts of the tonsils. Not only do the pyogenic bacteria, especially the streptococcus, develop and thrive here, but the Klebs-Loefer and the tubercle bacilli increase in numbers and virulence. The moist surfaces of the tonsils catch the passing germs and unless these bacteria are overpowered by the leukocytes that pass to the surface of the tonsils, they are apt to enter the open follicles and here the efforts of the phagocytes are to a large extent overcome by the sturdy growth the germs soon acquire in these ideal incubators.

Some years ago I had a patient who had been a frequent sufferer from follicular tonsilitis. Her tonsils, greatly hypertrophied, were veritable sponges, but she refused tonsilotomy. One of the arguments used in urging the point was that, should she acquire diphtheria, the prognosis would be exceedingly bad. A year or so after this conversation she did show a throat positive to the Klebs-Loefer bacillus. Diphtheria antitoxin was used immediately in large and frequently repeated doses but the development of the disease was most rapid and the infection most virulent.

The membrane extended in a day to the larynx and when I did a tracheotomy it was impossible to get below the membrane which had extended beyond the larynx down the trachea, toward the bifurcation.

This good woman lost her life because she had developed tonsils that afforded the diphtheria bacilli anidus in which to acquire so luxuriant a growth that the protective agents of the body, even when aided by introduced antitoxin, were not able to overcome them.

When these crypts are infected by the pyogenic bacteria, absorption of the toxalbumins occurs and the patient presents that well known train of symptoms including myalgia, malaise, etc.

If not only the toxin, but the germs themselves, pass into the lymph or blood streams there is no end to the sequelae that may develop. Quinsy, cervical adenitis, arthritis, endocarditis, pleurisy, acute nephritis and even general septicemia are not unknown. Streptococci, which are frequent invaders of the tonsils, are often the cause of rheumatic arthritis. Occasionally an extirpation of the tonsils will completely relieve one who has suffered from repeated attacks of so-called artic-

ular rheumatism and no case of rheumatic arthritis or arthritis deformans should be allowed to run on indefinitely without a most careful investigation of the tonsilar conditions.

Not all tonsils are diseased, not even all that seem to the superficial observer to be large and inflamed. When normal they have their function in the economy of the body that is valuable. They act as safeguards to the deeper respiratory organs. While the lymphoid cells that form the tonsils are to some extent phagocytic in their action, many polymorphonuclear leucocytes make their way from the capillaries through the epithelial covering to the surface of the tonsils and in no part of the body is the theory of Metchinkoff better illustrated.

It is not beyond possibility that the tonsils may in a measure resemble the ductless glands in having some internal secretion that exerts some valuable influence upon the tissues of the growing child or adolescent. It is evident, anyway, that the tonsils have when normal, as Adami suggests, some important function. While they are in anything like a normal condition this battle for the protection of the system is always on and a tonsil that is enlarged, but not sufficiently so to interfere with proper breathing or articulation, is not necessarily a menace to the body; but on the contrary it may be simply normally congested with blood that is bringing greater numbers of phagocytic cells to the fray.

The removal of this type of tonsil is deplorable and I consider the ruthless destruction of tonsils that are not perfect in appearance but functioning properly to be unpardonable. Conservation of resources is more important in the bodily economy than in any other realm.

More than all this a tonsil may occasionally succumb to the invasions of bacteria and yet recover and be of its former value. Treatment often helps these tonsils that are in trouble. Ice held against the tonsil with a tenaculum forceps will frequently break up an attack, by lowering the temperature of the incubator and so the attacking power of the infecting bacteria; the curette will empty the follicles of the accumulated material and sometimes of the cause of the disease. Suction pumps are now recommended to completely empty the follicles and at the same time create a beneficial hyperemia.

Local applications of tincture of iodine into the crypts themselves sometimes sterilize them. I

notice that in the above I have given no absolute specific, we are all still searching for it.

A normal tonsil or one that is not absolutely hors de combat should never be removed, but one that is constantly giving way to its enemies or whose crypts have become so chronically the harborers of infection that the toxins are being discharged into the system and immediately upon the receipt of any slight shock acute exacerbations occur or whose hypertrophy has become so great that normal respiration or articulation is interfered with—such a tonsil should be sacrificed, removed capsule and all. There is no class of tonsil that should be removed more promptly or more thoroughly than one infected with tubercle bacilli. Tonsils like these are no longer strongholds of defense but have turned their guns against the body which it was their duty to defend and are now most dangerous menaces and should be removed.

Surgery of the tonsils will not be considered except to warn against simply cutting off a portion of the tonsil and expecting good results. Unless the operation be thorough the results will be disappointing to both surgeon and patient. If a particle of tonsillar tissue that contains a single crypt remains, the old symptoms are more than apt to recur.

I have in mind a young lady who consulted me because of frequently recurring attacks of headache accompanied with lameness in the neck and slightly elevated temperature. This temperature and the general depression had made a tubercular suspect. After seeing her in a few attacks, the tonsils were convicted of being the offending organs and were removed with Abraham's snare after dissection. The girl was a bad ether patient and as the anesthesia was being administered by the cone and drop method, the tonsils were accordingly difficult to get and when it was found that a part of her right tonsil had not been included in the first mass removed, I did not dare to have the anesthesia prolonged to get the part remaining.

She was free from trouble for some time, but eventually the old symptoms recurred and a search revealed a single follicle high up under the anterior pillar in the bit of tissue that had escaped. The tonsil curette destroyed its lining mucous membrane and relieved the trouble.

In reporting the difficulties of this case, I can not fail to call attention to the matter of anes-

thesia. Had I been free to work without the interference of the cone, there would have been no difficulties to report. Our anesthetist is now using for all cases of removal of tonsils and adenoids the three bottle apparatus designed by Gwathmey. This conveys the anesthetic to the patient by small tubes inserted into the nostrils and the field of operation is not interfered with by the anesthetist during the time the operator is working. A foot bellows furnishes the proper air pressure.

Another woman reported that a tonsilotomy had been performed some years before and gave a similar history. This remaining crypt was most difficult to find and to treat, but her attacks are relieved by irrigation with a mild alkaline antiseptic.

The question drainage of diseased follicles is an important one. The largest tonsil is not always the greatest offender. Not long ago I was called to see a little girl of 8 years thought possibly to have mumps. The glands of the neck were greatly swollen but the enlargement had come on in a night—too rapidly for mumps. Close inspection excluded the parotids. Her throat, at first sight, appeared to be normal but, upon retracting the anterior pillars with a hook, a large number of pus infected follicles were found which yielded readily to treatment. The first thought in cervical adenitis should be the tonsils. Their treatment or, if necessary, their removal will often cause a return of these glands to a normal condition and so save many an unsightly scar of the neck.

No study of the tonsils, however superficial could go far without coming upon the subject of tuberculosis. While the location of the tonsils is such that the inspired air may bring tubercle bacilli to their moist surfaces and all infected milk must pass over them on its way to the stomach, the role of the tonsils in tubercular disease is yet far from positively determined. Nearly all observers are agreed that about 5 or 6% of all tonsils hypertrophied from any cause are tubercular when studied post mortem. There is almost a concensus of opinion that pulmonary or laryngeal tuberculosis are seldom secondary to tonsillar involvement. There seems little doubt, however, that so-called scrofulous glands of the neck usually receive their infection through the lymphatics from the tonsils. Yet there are those who claim that the tubercle bacil-

lus may pass through the tonsil to the lymph and blood streams and cause not only tuberculosis of the cervical glands, larynx and lungs and tubercular meningitis and peritonitis, but even general miliary tuberculosis and that without leaving any evident tuberculosis of the tonsils. The infecting germs travel equally well counter to the lymph current.

When the glands of the deep cervical chain are swollen and the patient reacts to the Von Pirquet test and there is even a suspicion of involvement of either tonsil, this should be removed at once and in its entirety.

The glands of the neck should not be removed or, as was done as a routine not many years ago, incised and packed with iodoform but they should be left entirely alone and the patient treated with tuberculine. This method is showing brilliant results in the hands of those that use it and horrible scars are being avoided.

I hope you will all avail yourselves of the opportunity to hear Dr. Ellis Bonime of the Polyclinic Hospital of New York when he speaks at the coming meeting of the Vermont State Medical Society in Rutland in October. He is doing most wonderful original work in his clinic with tuberculin as well as with other vaccines and serums.

In closing I would summarize as follows:

Tonsillitis is an important disease especially as regards its sequelae.

Both their location and anatomy render the tonsils susceptible to infection, as they are in the path of material passing in the air current and in the food. The crypts are ideal incubators for bacteria, pathogenic to the human body.

The tonsils, however, have an important function and when not positively a menace should never be sacrificed. But when they are chronically and incurably inflamed or are the nidus of infections that drain into the blood or lymph streams, or when they are infected with the tubercle bacillus or when they are so large that they interfere with normal respiration or articulation they should be removed.

Tonsilotomy should be complete, especially should every crypt be included, as these are the locations in which the pathogenic bacteria incubate and produce their toxins.

May 14, 1914.

"SURGICAL OBSTETRICS."*

BY

J. M. GILE, M. D.,

Hanover, N. H.

For nearly two hundred years there has been little change in principles of the practice of the obstetric art. Podalic version, embryotomy, and the use of forceps were all well established procedures two centuries ago. The use of anesthesia and antisepsis have rendered these procedures safer and less painful, but in the procedure itself there has been practically no modification. In the field of surgery on the other hand, advance has been such, due largely to these same two agents, anesthesia and antisepsis, that not only has surgical method been revolutionized, but a large part of the surgery of the present day has been actually created. In view of these facts it would seem to be a proper time to carefully review our attitude toward surgical procedure in obstetrics, and see if some readjustment may not be needed for the greatest good of the patient and our own satisfaction in a better sense of proportion.

Fortunately the great majority of women are still able to deliver the child without really material-aid on the part of the physician. When assistance is required, we may divide it into two groups—one that may be called obstetrical proper, the other surgical. The obstetrical procedure, as already suggested, consists of forceps, podalic version, and embryotomy. In other words, in obstetrical procedure the attack is always on the child. Two of the methods mentioned, forceps and podalic version, are and will doubtless continue to be of the greatest aid. The third, embryotomy, so far as the live child is concerned, is merely a euphemism for murder, and should, I believe, at the present time never be resorted to except under some extraordinary circumstances that puts surgical aid entirely out of reach of the lonely practitioner.

In what we may classify as surgical, as opposed to obstetrical procedure, the attack is on the mother instead of the child. This also may be undertaken in three different ways—abdom-

*Read before the Windsor County Medical Society.

inal Caesarean section, vaginal Caesarean section, and symphysiotomy. As with obstetrical methods one of these procedures may be excluded from modern day surgery—namely, symphysiotomy. The possibility of permanent mechanical injury is by no means slight and the danger of a serious sepsis in opening the prevesical space is quite as great as the danger of such sepsis from either form of Caesarean section. We have left then to consider either abdominal or vaginal Caesarean section, and the condition in which they should be applied in place of forceps or version; and while I am far from belonging to that group of modern radicals, who appear to estimate a Caesarean section as simpler than low forceps, I believe that in view of the relative safety of modern surgery the surgical procedure in selected cases and in competent hands will prove much safer for both mother and child than is the extremely difficult forceps delivery. The malformed or contracted pelvis is the condition that most obviously compels us to consider the need for surgical aid and if we rule out symphysiotomy, and embryotomy, Caesarean section is the only recourse. The difficulty of determining absolutely what case is incapable of normal delivery is very great. The books on obstetrics lay down rules of exact measurements that are supposed to determine when normal delivery is possible, but I doubt if the average student or long experienced practitioner, even though he may make relatively accurate measurement of the pelvic diameters, can feel equally confident that he knows just how large the head is that must pass through these diameters. It has been not an uncommon experience with us that cases sent to the hospital for Caesarean section have proceeded to a normal and easy labor; but it has been equally and perhaps more common in our experience to find forceps delivery absolutely impossible where we had fully believed that it could be accomplished. It is just here that a great danger lies, for the case that has been maltreated with forceps becomes a most unfavorable case for Caesarean section. Sepsis has possibly been introduced, tissues have been bruised and battered with a resulting loss of resistance that renders the case one of grave danger. It is here then that I believe one of our readjustments should take place and that in the doubtful case of contracted pelvis, we should resort more

promptly to surgical procedure without first attempting the forceps delivery.

The next group of cases that may demand surgical assistance is that in which, when the pelvis is amply large, great resistance is offered by the soft tissues in the shape of the dense leathery undilatable cervix, in which case the uterus may labor for hours or days without making any progress, and in which attempts at manual or instrumental aid in the dilatation succeed only in lacerating instead of stretching. These cases are particularly likely to occur in a primipara, past the age of thirty-five, and here, I believe, interference in the form of a vaginal Caesarean section is infinitely less dangerous to both mother and child than to allow the process to go on indefinitely. If reasonable vaginal room can be obtained the procedure is simple and quick. Transverse incision is made across the cervix just below the attachment of the bladder. The bladder is wiped back with a sponge, while traction is made on the cervix. The cervix is then split through the mid-line of the anterior lip with blunt pointed scissors, the incision being carried up entirely through the internal os. This gives ample room for the easy application of forceps by means of which the child is at once delivered. A few interrupted sutures reunite the split cervix, the bladder is turned back and attached in its original position; and the case is in infinitely better condition for prompt and complete recovery than when excessive laceration by the stretching process has been produced.

The final group of cases in which surgical interference is indicated is that in which the constitutional condition of uremia is threatening to or has actually produced eclampsia. Here speedy delivery is the one necessity, and speedy delivery is often impossible by any of the so-called obstetrical methods. This group of cases offers us a choice between abdominal and vaginal section. My recent experience with vaginal section has been so favorable that I am inclined to that course when the bony pelvis is sufficiently roomy. It can be done in practically the same time required for the abdominal section and you have avoided the additional danger that comes from opening the peritoneal cavity. I have recently, in one case, performed an abdominal Caesarean section for placenta previa with rigid os, and it would seem that this combination of con-

ditions might occasionally demand surgical interference and the hemorrhage could be better controlled by the abdominal than by the vaginal section.

I make no claim to originality in any of the above brief suggestions, but have merely endeavored to clarify, if possible, the situation by a simple classification of the conditions in which surgical interference may benefit our obstetrical practice.

POLIOMYELITIS.

BY

O. D. EASTMAN, M. D.,
Woodsville, N. H.

I took this subject, not that I know or have had much experience with the disease, but to excite a general discussion and draw attention to some of its phases which is so liable to occur at any time in any locality. Also because my attention was called so forcibly by some cases this summer at a town in Vermont, to the lack of knowledge of the physicians of that place of the precautions for the prevention and spread of the disease.

A physician who was in attendance of the first case was interviewed by the board of health and he stated he never knew that poliomyelitis should be reported or that quarantine should be enforced, consequently the State Board took the matter up and a meeting of all the physicians of the immediate vicinity was called and a talk of instruction for the edification of the doctors was given. As a result the doctors were on the lookout for the disease and some sixteen cases were reported and quarantined.

This is a report of some of the cases that occurred in Vermont:

REPORT.

During the month of July, 1913, an epidemic of acute poliomyelitis broke out in Hardwick and vicinity and lasted until the middle of September. During the epidemic there were sixteen cases in Hardwick, two in Walden, one in Danville, one in Lyndonville, two in Wheelock, one in White River Junction, one in Westmore, one in Glover and one in Burlington. The disease was generally ushered in by vomiting, rise

of temperature, pain in the back and extremities, accompanied with great restlessness and weakness of the limbs. These symptoms continued for three, or in some cases four days, when paralysis took place in some group of muscles. The fever would subside in a few days and the patient's general health would commence to improve while the paralysis remained unimproved for three or four weeks, since which time the paralysis has gradually improved, but up to the present time, November 24, none of the cases have made a complete recovery. There were no fatal cases in Hardwick. There was one fatal case in Glover and one in White River Junction. The symptoms varied somewhat in different cases according to the part of the spinal cord most affected; if the lesions were high up in the cord the patient was apt to be dull and stupid instead of very restless. In other cases there was stiffness and pain in moving the head and neck. There were a few very interesting cases in this epidemic.

Case I.—A boy five years old was taken ill August 7, with rise of temperature, and became very stupid and indifferent to everything about him. On the fourth day he was unable to close one eye and the right side of his face was partially paralyzed. No further paralysis took place, but at the present time his face is partially paralyzed.

Case II.—A boy ten years old was taken ill August 15, with rise of temperature, restlessness, with no pain. These symptoms continued for three days when his general condition improved and his case was thought to be an abortive case, when it was discovered that he could not quite close one hand. The flexor muscles of the hand were partially paralyzed.

Case III.—On the evening of August 10, a girl ten years old came to Hardwick in an automobile from out of town. She complained that night of being cold and spent a restless night. On August 11 she vomited, and had some rise of temperature with pains in back and extremities. August 13 the grandmother remarked that the patient was growing very weak, as she fell when attempting to walk. During the night of the 13th both legs became totally paralyzed. On the night of the 14th the right arm and forearm became totally paralyzed and the left arm was paralyzed, leaving only the left forearm unparalyzed. This patient had more or less irregu-

lar action of the heart and had several attacks of difficult breathing, showing that the muscles of respiration were more or less implicated. This patient left Hardwick at the end of six weeks, September 21, but very little improved.

I omitted to state under symptoms that in the majority of cases there was a scarlet hue about the face and chest very similar to that of scarlet fever, and that the patella reflex was exaggerated at the beginning of the disease but was absent before paralysis took place.

The age of the sixteen patients at Hardwick ranged from two to fourteen years.

Poliomyelitis from all information obtainable to the present time is without doubt of an infectious and contagious nature.

The causative agent is not known, but the mortality and subsequent paralysis deformities, which are only too much in evidence, place anterior poliomyelitis among the diseases most dangerous to life and future usefulness. An earnest, active co-operation of the medical profession who come in personal contact with the disease should establish a strict isolation period for the disease of four weeks or more from date of earliest symptoms with disinfection at termination of the period and no public funerals allowed of patients dying of the disease.

We should explain very carefully to the family the dangers arising, not only to themselves but to others from a disregard of the regulations of the board of health.

Human life is the most valuable asset we possess and it must be protected at any cost. The importance of obeying these instructions cannot be overestimated, as a large percentage of children who contract the disease will be deformed or crippled for life with consequent inability to work or provide for themselves. Circulars should be sent to families in the vicinity in order to afford them the opportunity of self protection, voluntary isolation of themselves and of their children, as the disease attacks young children chiefly, but adults are by no means exempt.

Mild cases which are only sick for a few days and do not show any definite paralysis are just as liable to convey the infection as the more serious cases and ought to be isolated for the full period.

All places where children gather together in numbers should be discountenanced by the local

authorities, such as, for example, picnics, excursions, public playgrounds, theaters, shows, Sunday school; clothes and linen used by the household should be disinfected and excluded from the public laundry; schools should be closed for three or four weeks after the isolation order is raised, and special placard on all the houses containing the disease in a conspicuous place in order that all may be warned. The neighborhood should be warned in regard to sanitary conditions, water supply, and sewage disposal and especially in regard to the danger from flies as, on investigation, biting insects were prevalent in practically all of the cases that have been reported.

Rosenau reported that he had been able to transmit a disease in all essential respects like poliomyelitis through the agency of the biting stable fly from monkeys purposely infected with poliomyelitis to six out of twelve well monkeys used in his experiment. Soon after Anderson and Frost reported the confirmation of Rosenau's demonstration, only they reported it took from nine to ten days after experimentally infected while Rosenau stated that the monkeys showed symptoms of poliomyelitis several weeks after the flies which were biting them frequently had had their first opportunity to receive infection from sick monkeys. This would allow abundant time for a definite biologic change in the virus, preparing it during the incubation in the fly as intermediate host, for successful inoculation into the warm blooded monkey. The symptoms of poliomyelitis in the experiments of Anderson and Frost appeared so soon after the first possible transference of infection material that in all probability the process consisted of a mechanical transference of blood or other infectious material taken up by the flies while repeatedly piercing the skin.

Sawyer and Herms of California, under the direction of the state board of health, went through a long and carefully selected series of cases. Their experiments were undertaken to determine the conditions under which the stable fly could transmit poliomyelitis and to learn whether the process was a more or less accidental transference or one which involved a specific biologic change of the virus in the fly. The monkeys they used were kept in fly-tight disinfected cages and were given an insecticide

bath; the flies were bred in the laboratory and everything used about the monkeys was sterilized.

The flies were kept in jars, fed on rabbit until ready for experiments. Both stable and house flies were allowed to bite monkeys sick with poliomyelitis and then at different stages the flies were allowed to bite well monkeys. They stated, "we failed to transmit poliomyelitis through the medium of flies even when they were allowed to bite the sick and well monkeys in rapid alternation and to bite the face as well as the chest and abdomen of the healthy monkeys." When flies allowed to bite diseased monkeys until visibly distended with blood were immediately chilled, ground up in a mortar and injected into both frontal lobes of a well monkey, he remained well during an observation period of eighty-nine days. From all the experiments in which the conditions were varied they were unable to transmit poliomyelitis from monkey to monkey through the agency of the stable fly.

The disease has been demonstrated as an inflammation of the gray matter of the spinal cord; most cases occur in hot weather, begin with fever, diarrhea and vomiting. There seems to be reason to believe that the bacterial infection in the intestines generates a toxemia which may be an etiological factor. Acute anterior infantile paralysis involves by inflammation the anterior horns of the gray matter of the spinal cord, producing a paralysis of certain muscle groups or an entire limb.

Some believe that a condition of irritation is present in the walls of the blood vessels of the cord leading to their dilatation and to the proliferation of their endothelial elements. Later degenerative changes occur in the ganglion cells as well as in the new fibres appearing in the vicinity of the altered blood vessels. The cause is supposed to be an invasion of bacteria, but not yet proven. The fact that the disease appears in epidemics points to the possibility of bacterial invasion. The affected muscles atrophy rapidly, the reflexes in them are lost, and reaction of degeneration develops from contraction of antagonistic muscles; deformities occur later in life, sometimes a certain amount of improvement taking place subsequently.

Treatment.—The treatment must therefore be directed towards elimination of toxin as much as possible. Urotropin, two or three grains, several

times a day; hot packs over the affected parts have a stimulating tendency; a warm sulphur bath, temperature 102; lumbar puncture is useful when complicated by polioencephalitis; ten to fifteen cubic centimeters of fluid will relieve intracranial pressure. Thus far intraspinal medication has proven useless. Dry cupping of the spine may be tried every other day; as the nose and throat point to a carrying medium from the secretions of the mucous membrane, gargles and sprays of an antiseptic nature should be used by all in attendance.

No wonder we do not know what to treat; the virus has been shown to belong to what is known as the group of filterable viruses, that is to say, the infective material passes through the finest filters. Under the highest power of the microscope it cannot be seen and so the organism is smaller than the wave length of light. But much has been done to improve the paralysis by massage; early active movements as soon as the pain subsides stimulate and encourage the patient to activity. Do not allow any muscle put on the stretch as muscle soon atrophies and loses its elasticity. Death is due to a paralysis of the respiratory muscles.

Look out for the bladder; the power of expelling the contents of the bladder may be interfered with and this can be very easily overlooked.

DISCUSSION.

Opened by H. N. Kingsford, M. D., Hanover, N. H.—Instead of discussing Doctor Eastman's very interesting and instructive paper, I thought it would be of interest to present, briefly, some of the facts relative to the cause of this important condition.

As compared with the period prior to 1909, when the first experimental transmission of epidemic poliomyelitis to the lower animals was accomplished, our present knowledge of the pathology of the disease may be said to be comprehensive.

We now possess information in many ways accurate and full regarding the causative microorganisms, its portal of entry into and paths of exit from the body, the period of its persistence in the tissues, the places of its location among the organs, the manner in which its presence brings about the characteristic lesions and symptoms of the infection, and certain important immunity reactions which it displays. The data upon which the knowledge is based is being extended by experiment; but up to the present the experimental studies have not yielded results that illuminate particularly the epidemiology of the affection.

It is now generally conceded that the poliomyelitic virus enters the human body by way of the upper respiratory passages, and in particular through the nasopharyngeal mucous membrane. Once within this membrane the virus may pass through the lymphatic channels, surrounding the filaments of the olfactory

nerves to the leptomeninges where it reaches the cerebrospinal fluid, or it may first enter the blood and be conducted to the central nervous organs by the general circulation.

Flexner and Clark have shown experimentally that when the virus is introduced into the upper nasal mucosa in monkeys its propagation can be followed from the olfactory lobes of the brain to the medulla oblongata and spinal cord. Another possibility exists, namely, that the virus introduced into the blood finds its way not directly to the nervous organs, but indirectly by way of the cerebrospinal fluid.

When, therefore, a quantity is introduced into the blood insufficient to cause infection, although a much smaller quantity produces infection when introduced into the brain, the reason may be that the intact choroid plexus prevents the virus from reaching the cerebrospinal fluid. It is well known that this anatomical barrier excludes from the cerebrospinal fluid many substances contained within the blood, that the barrier is not absolute but is capable of being broken down, and that the most frequent source of injury is the pathogenic action of infectious microorganisms.

Experiments on monkeys afford valuable support to the hypothesis that infection of the nervous organs in man occurs through the mediation of the cerebrospinal fluid. The virus readily traverses the nasal mucous membrane to reach this fluid, which is capable of carrying the virus to the interstices of the nervous tissues. The average incubation period after an intracerebral inoculation is about six days.

Pathological conditions of the leptomeninges and the cerebrospinal fluid play an important part in pathogenesis of epidemic poliomyelitis. The spinal fluid in cases of acute epidemic poliomyelitis is usually clear, colorless, and does not appear to be under any great pressure. It shows changes in the number of cells present, or in the globulin content, or in both, and reduces Fehling's solution. The number of cells is usually highest during the first weeks. Examination of the spinal fluid may be of value in diagnosis in the preparalytic stage and in abortive cases. It is not of value in prognosis as to life or ultimate recovery.

By specially devised methods there has been cultivated from the central nervous tissues of human beings and monkeys, the subjects of epidemic poliomyelitis, a peculiar minute organism that has been caused to reproduce the symptoms and lesions of experimental poliomyelitis. The microorganism consists of globoid bodies measuring from 0.15 to 0.3 of a micron in diameter.

No statement is ventured at present as to the place among living things to which the bodies belong. It is obvious that the cultural conditions are those that apply more particularly to the bacteria. There remains merely a single other possibility, namely, that two factors are present in the cultures, the one an invisible because ultramicroscopic organism, the other the globoid bodies just mentioned.

Extensive very recent work on the stable fly seems to prove rather conclusively that it is not capable of transmitting this disease. It seems probable that the solution of the problems connected with the cause of this disease is in sight, and that before many years we will be able to make a correct diagnosis and will also have a remedy within reach of us all.

C. S. Caverly, M. D., Rutland, Vt.—The doctor has referred to a local epidemic that occurred last summer and fall in Hardwick and vicinity in northern Vermont. We have suffered in Vermont at various times

during the last twenty years with epidemics of poliomyelitis. I have sometimes wondered if we are exceptional in that respect. I have happened to know of course, as all of us have, that Massachusetts has suffered, and I don't know about the other New England states.

It is the epidemiology of the disease that has chiefly interested me personally and officially. In 1894 we had the first marked epidemic of poliomyelitis that has ever been reported in this country, or that had been reported at that time. We have, in Otter Creek Valley, Rutland County, one hundred and thirty odd cases of the disease, with about sixteen deaths. It was an entirely new disease at that time, and one that was diagnosed very freely as meningitis on its appearance, especially in very light cases.

In 1910 we had in the state sixty or seventy cases. I cannot give you the exact figures today, I am sorry to say. It has been investigated by the state board pretty carefully and I have the figures at home, but there were between sixty and seventy cases. The disease in Vermont, beginning about two weeks later than the big epidemic that they were having that summer in Springfield, Mass., extended up the Connecticut Valley, and involved finally a small area in Canada in the vicinity of Sherbrooke. These cases following the Massachusetts outbreak, was a very curious sequence of events—very interesting, if nothing else.

Of the sixty odd cases in Vermont that year I think twenty-five or thirty occurred in the Connecticut Valley; on the west side of the Green Mountains there were probably about fifteen cases. The following year, 1911, there were about thirty cases in the state, and almost all of those were on the west side of the Green Mountains and only a very few scattering cases in the Connecticut Valley. In 1912 there were no cases except sporadic cases, and in 1913, last year, there were about fifty cases, all told, through the state. I think twenty-five or more than half possibly of those occurred in the neighborhood centering about Hardwick.

There are a great many things in studying this disease, sporadically or epidemically; I mean the searching for the cause, tracing the line of the disease from case to case and from epidemic to epidemic, is a very baffling undertaking. It is something that is perhaps attracting the attention of more acute scientific observers all over the world at the present time than any other disease, and at the same time everybody runs up against a blank wall after going a certain distance. I simply want to call attention to the baffling nature of the search for the cause of this disease, and finally I want to say a word about the abortive cases. In our studies in Vermont in regard to this disease we have taken account of nothing except the frankly paralyzed cases. We all know that in all of the epidemic diseases, all of the infectious diseases, the carrier case is the mild, abortive case, the walking case. It is the walking case which is now considered the chief source of the spread of the disease; it has been my query for some time if that was not exactly the case with reference to poliomyelitis.

Doctor Kingsford has very succinctly and definitely stated the scientific experiments in regard to the cause of this disease; the experiments with reference to the detection of abortive cases have led to really no practical results but have perhaps promised something.

If any of you are especially interested in the epidemiology of this disease there is a bulletin, No. 90,

published by the Hygienic Laboratory at Washington, relating to three or four very bad epidemics in different parts of the country, which is extremely interesting and perhaps furnishes the best account of recent work in the epidemiology of poliomyelitis.

But the spread of the disease by abortive cases, mild, walking, carrier cases, has seemed to me to be possibly a source that has been somewhat overlooked in the past. Of course you are all familiar with the experiments of Doctor Rosenau in which he describes the passing of the disease from monkey to monkey through the bite of the stable fly. That has not been confirmed by the Washington observations, and Rosenau himself has told me within a few months that he has been unable to repeat the experiment successfully in Boston.

The occurrence of the disease among lower animals is also a much vexed question. The lower animals, particularly hens, horses and pigs, have been found to suffer with some paralytic disease coincidentally with the occurrence of poliomyelitis in the human family; there are a good many cases on record. We have seen a good many in Vermont and there are a good many reported wherever it occurs, in which these lower animals have suffered in the same neighborhood. Doctor Flexner claims no lower animal is susceptible to this disease except monkeys; I expect he is right as he has made extensive experiments, but there is a coincidence that is another baffling feature in the study of poliomyelitis.

Doctor Northrup, New York.—May I hit that same nail another whack? Doctor Caverly drove one important nail and I would like to bang it once more, and that is the personal, near approach, or contact source of infection—the abortive cases, the undiagnosed—the missed cases, as the English call them. It seems to me I would like to leave that in your minds as a query—whether that does not fill the bill, the missed case. I think we are liable to lose our clearness of vision if we look to rats and mice and lower animals. I grant you they have a similar disease, but keep your eye on the most probable source, the carrier, missed case, undiagnosed case, just sick a few days. In every epidemic I believe that is the source of transmission.

SOME ASPECTS OF HIGH BLOOD PRESSURE.*

BY

C. M. SNEDEN, M. D.,
Littleton, N. H.

During the last 10 or 12 years many new processes and instruments have been created to aid the physician in making an accurate diagnosis of his cases. Perhaps the most important of these are the different types of apparatus for estimating blood pressure.

At first only a few specialists used the blood pressure apparatus but as its value became more evident, certain of the life insurance companies required the systolic pressure to be taken by the medical examiner in all cases where the amount applied for was \$5,000.00 or over.

Recently we have become more and more in the habit of using the instrument to aid us in diagnosing our cases. Formerly only the systolic pressure was taken, but further study has shown that not only the systolic but also the diastolic and pulse pressure should be found.

Every patient past 35 years of age who presents himself to the physician for treatment should have his blood pressure taken and this repeated frequently if any doubt exists. The necessity of this is manifest when we find from good authority that at least 15% of all persons who consider themselves physically well, are really unsound. And any physician who has made many life insurance examinations has frequently found cases of heart murmurs, diabetes mellitus, and nephritis in applicants who honestly believed themselves normal in every way. The manner of taking the blood pressure readings is probably of more importance than the type of apparatus used, although personally I favor the aneroid type, as by these the diastolic pressure is more easily and correctly taken. The patient should assume a comfortable position, either sitting or reclining, the left arm fully exposed and extended on a level with the heart. The best time for taking the pressure is about 2 hours after meals, avoiding all excitement and muscular exertion just prior to making the test.

A constant systolic pressure of 160 m. m. or over, or one under 100, or a pulse pressure over 40 or under 20 should be considered abnormal and put the physician on the alert. Finding these he should study the case carefully until he has ascertained the cause of the same. The repeated estimation of the pulse pressure is very important as it shows the progress of the case for better or worse. The more effective your treatment, the nearer your pulse pressure will approach the normal, thus indicating that the equilibrium between the heart and the pressure is becoming established.

The taking of frequent blood pressure readings in all pregnant women should be a routine practice. In normal pregnancy there is no rise in blood pressure, and any deviation from normal should require immediate investigation. Toxemia

*Read at the Annual Meeting of the New Hampshire Medical Society.

of the kidneys can be diagnosed by high blood pressure fully 6 weeks before albumen shows in the urine. It is considered dangerous by good authority to carry a pregnant patient through the 280th day with a systolic pressure over 145 m. m., as eclampsia is almost a certainty. A continued high pressure after delivery would warrant an unfavorable prognosis for complete recovery.

In chronic interstitial nephritis we have a constant very high systolic pressure, with comparatively low diastolic pressure. A reduction therefore of the pulse pressure would show that your treatment was effective and warrant a more favorable prognosis, than if the pulse pressure increased or remained high.

A constant systolic pressure over 160 m. m. is nearly always indicative of renal lesion, while if it is over 200 m. m., it is almost positive even though albumen and casts are not noted in the urine at first, for if the case is observed long enough they are sure to show sooner or later. It is an acknowledged fact that normal urinary findings do not exclude kidney disease, as many of these cases of prolonged high pressure with normal urines, show marked pathological changes in the kidney structure when examined under the microscope.

Contracted kidney and arteriosclerosis are practically always found together. A sudden rise of pressure in contracted kidney indicates the approach of uremia, while a quick fall of pressure would indicate failure of cardiac action.

In arteriosclerosis there is persistent high systolic pressure and very high pulse pressure, although some very advanced cases of arteriosclerosis do not show exceedingly high systolic pressure. Arteriosclerosis is probably more often caused by high blood pressure, than high blood pressure caused by arteriosclerosis. Microscopical examination of the kidney structure in cases of arteriosclerosis will nearly always shown chronic interstitial nephritis.

Klatz has proved by experiments on rabbits that hypertension alone, without toxic elements, can produce arteriosclerosis.

The high pressure of neurotic patients can be differentiated from other conditions, as the amount of pressure varies markedly from day to day according to the nervous conditions of the patient.

In auto-intoxication the pressure is high, but does not remain so, and responds quickly to appropriate treatment.

Death in hypertension may be due to either cerebral hemorrhage, cardiac incompensation or uremia. The more marked the renal disturbance the more grave the prognosis on account of increased tension and danger of uremia.

The treatment of hypertension in acute troubles is comparatively simple as it will attain the normal in a short time when the causes, such as auto-intoxication are given appropriate treatment. These cases should be reduced as soon as possible as continued high pressure, from whatever cause, may bring on nephritis, arteriosclerosis, disease of the retina or temporary blindness as result of spasm of retinal artery.

The treatment of chronic hypertension is another and more serious matter. The great variety of methods and drugs recommended would indicate that no specific has yet been found.

In these cases it is not the hypertension that requires treatment, but the cause of the hypertension is frequently a defensive reflex phenomenon and a sudden reduction of the same might lead to disastrous results.

In order to treat hypertension successfully we must consider the factors which maintain it, namely, cardiac energy, peripheral resistance, elasticity of the arterial walls and the amount and viscosity of the blood in circulation. When there exists an aortic aneurysm or cerebral hemorrhage is imminent, we should use the nitrates, usually sodium nitrate, as it is easy to take and its action more prolonged.

Abrams, in a recent number of *International Clinics*, recommends concussion between the 3rd and 4th dorsal spines to stimulate the depressor nerves of the splanchnic vessels. He finds this method very effective, especially in cases of very high tension, sometimes getting a drop of as much as 30 m. m. after a half minute's treatment. He recommends daily treatments of 10 minutes each, resting every other half minute during treatment, thus giving a total of 5 minutes treatment daily. This method seems well worth trying.

Numerous other treatments and drugs are recommended but are of only slight value in most cases. Let us try to prevent hypertension in our own bodies by leading more simple lives, eating and drinking less, and sleeping more.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

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EDITORIAL.

The Education Commission appointed by Governor Fletcher to consider the university system of Vermont, has handed its report to the governor. The report has not been circulated in its entirety at this writing, but its findings in substance have been published in the press. Judging from the newspaper summary it is a most wonderful document and apparently goes the report of the Carnegie Foundation, upon the work of whose experts it was based, one better. In substance it advises that no more state aid be given to the institutions of higher learning in the state, urging that these institutions be considered as private enterprises. It specifically advises the closing of the College of Medicine on the ground that it is not worth to the state what it costs and that students of medicine may be more economically educated by concentrating them in a few of the larger already-existing schools, thus decreasing the overhead charges.

That such a report should be made by a body of experts whose support is insured by just these

methods applied to business while surprising, was not so astounding as that any body of Vermont men should so far fail to appreciate the tremendous influence on the educational tone of our entire population of these schools in our midst, surpasses understanding. If these recommendations were to be carried out in their entirety—which God forbid—our state would degenerate into an educational desert. Nothing can so quickly cause the decadance of the country as the carrying out of such a centralization policy in educational matters. To be sure our boys can very likely be educated to a greater stage of refinement and at a less per capita charge in the centralized schools but that is a small part of the problem. What about the homes and villages from which these young people are to be removed—never to come back? The few who can afford to go—or whose people can afford to send them—will go to the larger cities for their medical education, but very few of them will return. Many who can now get the education near home will be effectually deterred by the increased expense necessary to attend a medical school at a distance and can never go. Any one of us can point out numbers of successful practitioners who are of great value to their communities, educated in these local schools and in the smaller medical colleges who would never have been financially able to have received such an education away, and would therefore have been lost to the public in their present capacity if medical education could have been obtained only in the great cities. Does Vermont wish to deny to her present sons and daughters even those privileges which their fathers enjoyed and which have made these men of so great value to their state? Does she wish to say—“if you desire to improve your position and gain as good or better an education than your fathers or mothers had, you must pack your belongings and go to a great city.” We do not believe that such is the case and we certainly expect our legislature to vindicate the

independence of Vermont to the world and deny the aspersion that we are not able to educate our own children.

We are publishing in this issue in a prominent place the contents of a leaflet published by the American Society for the Control of Cancer. The information contained in this leaflet is of such tremendous importance that we wish it might be placed in the hands of every adult in the country in such a way that it would surely be read. It is a well accepted fact not denied by any experienced and well-read medical man that there is no control for cancer other than the knife and that this may assure success it is equally certain that operation must be early. All other methods are of very uncertain value and often by causing delay are of great harm. No one can estimate the toll in unnecessary deaths which is sure to result from the recent widespread newspaper notoriety of these so-called Radium Cures. It is high time for the work of this society and we cannot too heartily recommend this little booklet to the careful conscientious consideration of everyone. We trust that local medical societies will co-operate with the society in spreading its literature which we anticipate can be had for the asking.

WHAT YOU SHOULD KNOW ABOUT CANCER.

**In the early treatment of cancer lies the
hope of cure.**

PUBLISHED BY

THE AMERICAN SOCIETY FOR THE CONTROL
OF CANCER.

289 Fourth Avenue,
New York City.

THE NATURE OF CANCER

ITS LOCAL BEGINNING

Cancer is almost invariably at first a local disease.

It is easily cured if promptly recognized and at once removed by competent treatment.

It is practically always incurable in its later stages.

THE DANGER SIGNS

The disease usually begins in some unhealthy spot or some point of local irritation.

In external cancer there is something to be seen or felt, such as a wart, a mole, a lump or scab, or an unhealed wound or sore. Pain is rarely present.

Cancer inside the body is often recognized by symptoms before a lump can be seen or felt. Persistent indigestion, with loss of weight and change of color, is always especially suspicious.

Persistent abnormal discharge from any part of the body should arouse the suspicion of cancer, particularly if the discharge is bloody.

The early and hopeful stages of cancer are usually painless.

THE CURE OF CANCER

WHAT YOU SHOULD DO

Fear the beginning of cancer.

Never be afraid to know the truth.

Any painless lump or sore appearing upon your body should be examined by your physician.

By the time a cancer has become painful the best chance for its cure has passed.

But even a painful cancer can be removed permanently if it has not extended too far beyond the place where it began.

SEEK EARLY EXAMINATION

If you notice that a wart, mole or other "mark" begins to change in appearance or to show signs of irritation go to a physician and have it completely removed. Do not wait until you are sure it is cancerous.

All lumps in the breast should be examined. In women the normal change of life does not lead to increased flowing, which is always suspicious, as is the return of flowing after it has stopped.

MEDICINE USELESS

Medicine which relieves pain does not have any effect upon the disease itself; it simply produces a period of freedom from discomfort and therefore delays the proper treatment.

RADIUM AND CANCER

LIMITATIONS OF RADIUM

According to the most authoritative opinion the curative effects of radium are practically limited to-day to superficial cancers of the skin, and to superficial growths of mucous membranes and certain deeper-lying tumors of bone, etc., which are not very malignant. Radium has probably been shown to exert a definitely curative effect on certain of these cases, while the disease is still local and in the early stages.

Radium definitely relieves suffering when used in the advanced stages of deeper-seated cancers; but in those cases it improves only the visible or tangible manifestations and exerts no effect upon the disseminated disease as a whole. It is believed that there is as yet no proof that radium has finally cured any case of advanced and disseminated cancer.

RADIUM FAKES

The public should take warning against dishonest and fake, money-getting radium-cure establishments, conducted by individuals who possess little or no radium, and have no knowledge of its use. These people promise cures, but are, in reality, unable to obtain even those palliative effects which are possible from radium.

The best results of radium therapy can be secured only when comparatively large amounts are available for use, and the present limited world's supply of this metal places it out of reach of the great majority of patients.

THE PREVALENCE OF CANCER

A MENACE TO THE INDIVIDUAL

Cancer is of greater frequency at ages over forty than tuberculosis, pneumonia, typhoid fever or digestive diseases.

At ages over forty, one person in eleven dies of cancer.

One woman in eight and one man in fourteen over forty years of age is attacked by the disease with fatal results.

Largely because of public ignorance and neglect, cancer now proves fatal in over 90 per cent. of the attacks.

A MENACE TO THE NATION

Of the 75,000 deaths from this disease in the United States in 1913, about 30,000 were deaths

from cancer of the stomach and liver, 12,000 from cancer of the uterus and other organs of generation, 7,500 from cancer of the breast and about 25,500 from cancer of other organs and parts.

A MENACE TO SOCIETY

Cancer respects neither race, creed nor social position.

It is the common enemy of all mankind, attacking rich and poor alike.

Its insidious onset occurs at the most useful period of life; and death is most common at the age when the care and guidance of children and the continuance of business responsibilities make the mother and father the most useful members of society.

THE CONTROL OF CANCER

A MESSAGE OF HOPE

The only cure for cancer is to remove every vestige of the disease.

The only sure way to do this is by a surgical operation.

If taken at the beginning, the majority of cases of cancer are curable.

All cases will end in death if let alone.

Records of our best hospitals prove that the chances of cure are very high with early operation, and that these chances decrease with every day of delay.

Early diagnosis is therefore all-important.

A NATIONAL CAMPAIGN

The American Society for the Control of Cancer is studying these hospital records and will spread nation-wide the message of courage and hope in early recognition and prompt operation.

By publishing circulars and articles in newspapers and magazines, and by organizing lectures and public meetings, this society is conducting a general campaign of education based on the latest knowledge of the disease.

Thoughtful and influential people can help this work by joining the society. Write to the office, 289 Fourth Avenue, New York City, for further information.

NEWS ITEMS.

The Supreme Court of the United States decided in *Sweeney vs. Erving* that inflicting a burn

on a patient while making an X-ray examination is not of itself evidence of the negligence of the physician. The court also held that a physician to whom a patient is sent by another physician of recognized ability for an X-ray examination may rely on the latter's judgment as to the patient's ability to undergo the examination without harm and is under no obligation himself to make an examination into his condition to learn that fact.

Mrs. Hester A. Davis of Wilmington has filed a suit for damages of \$5,000 against Dr. S. F. Dunn of that town alleging improper treatment of a broken wrist. She says that she fell last March and suffered a compound fracture but that Dr. Dunn said that there was no fracture. The plaintiff alleges that she had to have her wrist broken again in a North Adams, Mass., hospital and reset.

Dr. B. J. Andrews, for thirty years superintendent of the Mary Fletcher Hospital, has resigned his position on account of ill health. This resignation takes effect September 1, 1914.

Dr. T. S. Brown of Burlington, for a number of years professor of anatomy at the College of Medicine of the University of Vermont, has been appointed superintendent of the Mary Fletcher Hospital. He will commence his active duties September 1st.

Dr. L. B. Morrison until recently medical director of the Mary Fletcher Hospital, has accepted a position in the New Peter Bent Brigham Hospital, Boston, Mass.

Dr. C. E. Wells of Burlington has accepted a position as assistant at the Massachusetts General Hospital in Boston.

Dr. B. L. Arms, University of Vermont, 1902, has been elected to the position of professor of preventive medicine at the medical department of the University of Texas at Galveston.

The New York Court of Appeals has just handed down a very important decision in case of *people vs. Willis Vernon Cole*, a Christian Scientist who has been convicted of practicing medicine without a license and fined \$100. Cole was convicted on the evidence of a woman detective employed by the County Medical Society. The witness testified "that she applied for treat-

ment for weak eyes and that Cole told her she must remove her eyeglasses before God could heal. Then Cole sat in front of her holding her hands over his closed eyes for fifteen or twenty minutes and charged her \$2. The woman went back for a second treatment at \$1 a visit and said she had a pain in her back and was wearing a porous plaster. She was directed to remove the plaster and she would be cured. She said she asked Cole how he would cure locomotor ataxia and he said "just by prayer and having faith in God." Cole testified that he had maintained the office for eight years and that when he got his first knowledge of healing he was a sculptor and poet. He said he had never studied medicine in any way, and admitted that his income from his practice was at least \$6,000 a year. He asserted that all the money he got was given voluntarily. Justice Clarke, who wrote the prevailing opinion, decided in the negative the following question: "Is the commercialized use of prayer for the avowed purpose of treating all persons seeking cure for all bodily ills the practice of the religious tenets of a church?" The case will be appealed and a final ruling obtained as soon as possible. It is conceded that if the ruling is upheld Christian Science healers throughout the State will be compelled to close their offices. The decision affects nearly 100 Christian Science healers in Manhattan who advertise themselves as such, and several hundred who undertake faith cures but do not make healing a profession. Most of the healers receive patients in their homes, but a number have quarters in office buildings. It is understood that because of the dissenting opinion of Justice Dowling no action will be taken against Christian Science healers generally until the Cole case has been passed on by the higher court. The decision is of wide interest not only because of the large number of healers deprived of a livelihood, but because it affirms the principle that religion and medicine may not enter into commercial competition. The court holds that it does not assume the function of curtailing a man in the practice of his religion. The opinion does not pass on the question of whether the practitioner may treat lawfully, but only whether he may treat for pay. There seems a certain inconsistency in this ruling. If a method of treatment is not forbidden by law, it seems difficult to understand that those who desire it may not pay for it. The ques-

tion is entirely apart from the merits of Christian Science for curing disease. As a system of healing, it is of course not recognized by our federal and state authorities. But if persons want it they should have it. Most persons would be too self-respecting to take without payment what they regarded as a valuable service, should the law thus restrict them.

A marked feature of the recent Atlantic City meeting of the American Medical Association was the large number of non-medical experts in sanitation and like branches who officially joined in the proceedings. A nation-wide campaign of public health education is to follow. Large appropriations were voted for this object.

Upon the order of Postmaster-General Burleson, the offices of the Sanden Electric Company, which carried on an extensive business in the sale of electric belts as a cure for various ills, were entered by postoffice inspectors at New York, June 23d, and the general manager, Gideon H. McIvor, was arrested on a charge of using the mails to defraud.

Congress is to be called upon through the House of Delegates of the American Medical Association, at the urgent request of the dermatologists attending the recent Atlantic City convention, to create a national institution for the care of the 500 lepers in the United States. The bill will call for a \$500,000 appropriation. Such a resolution was adopted after the dermatologic section heard Dr. W. C. Rucker, connected with the Federal Health Department, tell of the spreading of the disease in the United States.

The infant incubator has been more of a failure than a success, Dr. E. Chapin, of New York, reported in an important paper before the section on diseases of children, at the recent American Medical Association meeting in Atlantic City. Out of 150 personal experiences with the incubator for infants, he could not report one satisfactory result, death following in the great majority of instances. He urged that the House of Delegates be asked to declare against its further use. He preferred the methods employed by Dr. H. McClanahan, of Omaha, who found that the home-made incubator served the purpose more satisfactorily, as they provided an abundant sup-

ply of fresh air, which could not be said of the patented affairs now in use.

Meningitis is curable in its incipiency, Dr. W. G. Schauffler, of Lakewood, N. J., told 150 specialists in a paper on the effect of high-frequency currents on respiration and circulation, before the American Climatologic Association at Atlantic City, June 20th. The "cure" was the first of which the experts who specialize in tubercular and closely allied human ills had ever heard, and they listened to Dr. Schauffler's address and studied lantern slides, tracing the history of the complete recovery of a child.

CHANGES AT ROCKEFELLER INSTITUTE.

The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following appointments and promotions: Dr. Hideyo Noguchi, hitherto an associate member in the department of pathology and bacteriology, has been made a member of the institute; Dr. Alfred E. Cohn, hitherto an associate in medicine, has been made an associate member for the term of three years; Dr. Wade H. Brown, hitherto an associate in the department of pathology and bacteriology, has been made an associate member for the term of three years. The following assistants have been made associates: Dr. Harold Lindsay Amoss, pathology and bacteriology; Dr. Arthur William Mickle Ellis, medicine; Dr. Thomas Stotesbury Githens, physiology and pharmacology; Dr. Israel Simon Kleiner, physiology and pharmacology; Dr. Alphonse Raymond Dochez, medicine. Doctor Dochez has also been appointed resident physician in the hospital of the Rockefeller Institute, to succeed Dr. Homer F. Swift. The following Fellows have been made assistants: Dr. Frederick Lamont Gates, physiology and pharmacology; Dr. Louise Pearce, pathology and bacteriology. The following new appointments are announced: Chester Harmon Allen, M. S., Fellow in chemistry; Dr. Alan M. Chesney, assistant resident physician and assistant in medicine; Dr. Harold Kniest Faber, Fellow in pathology; Dr. Ross Alexander Jamieson, assistant resident physician and assistant in medicine; Dr. Benjamin Schönbrun Kline, Fellow in physiology and pharmacology; Dr. John Jamieson Morton, Jr., Fellow in pathology; James Kuhn Senior, M. A., Fellow in chemistry; Dr. Joseph Richard Turner, Fellow in pathology.

OBITUARY.

Dr. Mary Vail Grinnell, one of the first successful women practitioners of medicine in Vermont, and at the time of her death, one of the few active physicians of her sex in the state, died at her home in Rutland, of acute appendicitis early this month. Dr. Grinnell was 59 years of age and was born in Danby, the daughter of Mr. and Mrs. William Vail. She had practiced medicine in the city of Rutland for thirty-four years continuously and had a large practice. Dr. Grinnell studied for five years with Dr. Middleton Goldsmith who conducted a dispensary here and also in the Woman's Medical College at New York and in the Woman's Medical College in Philadelphia. She is survived by a son, Dr. William H. Grinnell of Danby and one sister, Mrs. Bradford Congdon, also of Danby.

**AN EPITOME OF
CURRENT MEDICAL LITERATURE.**

CEREBROSPINAL FLUID.

C. H. Frazier, Philadelphia, in his chairman's address before the Section on Surgery of the American Medical Association (*Journal A. M. A.*, July 25, 1914), takes up the subject of the cerebrospinal fluid as a factor in the problem of intracranial surgery. He points out that it is a very important factor in all cases. Taking first meningitis as an illustration, he shows that there is an increase in the cerebrospinal fluid causing pressure interfering with the blood-supply and the function of the vasomotor and respiratory cardiac centers, and this is a determining factor as often perhaps as the specific infection. The treatment of meningitis should, therefore, include some means of controlling the intracranial pressure, as well as the microbic activity. The study of the physiology of the cerebrospinal fluid in relation to the congenital hydrocephalus offers another fruitful field for study. We do not know at present the causes of this condition, and the surgical treatment of it is also so far practically unknown. In brain tumors the cerebrospinal fluid is an absorbing topic. In most cases the increased intracranial tension is the result of the excessive accumulation of the cerebrospinal fluid, and the palliative treatment then becomes a problem dealing with this excessive accumulation. It is only

since 1840 that the connection between the subarachnoid spaces and the ventricle has been known. The cerebrospinal fluid has no analogy in the body. It is different on the one hand from lymph, and on the other from the liquid found in serous cavities, and some believe that it has some connection with nutrition of the brain cells. Some believe that it is simply a means of preserving the balance of intracranial pressure, and others again think that it is a mechanism for eliminating carbon dioxide from the central nervous system, and like urea increases the renal flow, so carbon dioxide increases the cerebrospinal secretion. In health the amount of fluid varies from 60 to 100 c.c., and it is very rapidly increased under abnormal conditions, and there is reason for suspecting that it then may be of the nature of a transudation. It fills all the spaces in the cranial cavity not occupied by the nervous and vascular tissue. So far as we know, there are no pathologic conditions where the symptoms are due to its decrease, and by the use of dyes in the subarachnoid spaces we are able to demonstrate that the lymphatic system has very little to do with its absorption, but that this largely occurs through the venous channels. Frazier believes that the pacchionian bodies may have a small part in the absorptive process, and he attributes a good deal in this way to the cerebral sinuses. It is no longer a matter of speculation that the cerebrospinal fluid is the output of the cubical cells of the chorioid plexus, and he asks, Should we not consider the chorioid plexus a gland subject to various influences like other glandular structures, some well known, others yet to be discovered? The suggestion of Stiles that ligation of the common carotid is an effective way of dealing with hydrocephalus implies that the activity of the chorioid gland is diminished by limiting its blood-supply as hyperthyroidism is controlled by ligation of its arteries. Unfortunately, this analogy is not supported by clinical or experimental evidence. Frazier relates his experiments in controlling the secretion of the chorioid gland with the extracts of other glands, the spleen, kidney, thymus, adrenals, etc. Nearly all of these produced a greater or less fall in blood-pressure, and with this an increased flow in the cerebrospinal fluid. He explains this by the fall of arterial pressure causing increased pressure in the cerebral sinuses, the dilatation of which forces the cerebrospinal fluid out of the ventricles. He

notices Dixon and Halliburton's findings that indicate a specific of some substance on the secretory function of the chorioid gland. In his own experiments, to find some method of retarding this secretion, it was not until he had utilized the thyroid extract that he produced any thing like inhibition. "When injected in sufficient quantities, the thyroid extract caused a temporary fall in blood pressure, with the usual transitory increase in outflow of cerebrospinal fluid; but the significant and altogether unique effect was the prolonged period of decreased outflow which followed, for three or four hours, that is, to the end of the experiment. Even when such small doses as to cause little, if any, change in blood-pressure are injected, the diminution in the rate of chorioid secretion is marked, so that we are led to the conclusion that the thyroid gland extract, when injected intravenously, has a specific inhibitory action on the chorioid gland." He will continue these studies. In conclusion, he says, the cerebrospinal fluid is of absorbing interest to the clinician in the diagnosis of many intracranial diseases and in measures for their relief. Of equal interest, however, are the problems of research to reveal the secrets of its function.

ABUSE OF NORMAL SALT SOLUTION.

L. Litchfield, Pittsburg (*Journal A. M. A.*, July 25, 1914), protests against the too free use of normal salt solution, and gives case reports supporting his contention. He holds that the administration of any artificial serum as a routine postoperative practice is questionable therapeutics. Too much water may fatally embarrass the heart as well as too much salt may the kidneys. When fluids cannot be taken by the mouth, thirst can be relieved by tap water or by isotonic dextrose solution given by enteroclysis. The dextrose solution is preferable in cases of threatening acidosis or inanition. When an addition to the blood-stream is positively indicated, this is best accomplished by dextrose solution; "isotonic (5.1 per cent.) by enteroclysis; isotonic, hypertonic (up to 30 per cent.), or hypotonic (2 per cent.), by intravenous infusion." There are no contra-indications for the use of dextrose, but often serious ones for the use of saline solution. In urgent cases the intravenous method is best and

greater care should be used to see that all water intravenously introduced is not only sterile, but also non-toxic. "In medical practice artificial serums should be more frequently employed; (1) isotonic or hypotonic (*a*) after severe hemorrhage, exhaustive vomiting or diarrhea; or (*b*) in cases of extreme inanition; (2) hypertonic (*c*) in toxemic cases, including eclampsia and uremia; (*d*) in cases of oliguria with threatened uremia; (*e*) to combat acidosis, or (*f*) in toxic states as after anesthetics, gas, morphin poisoning, etc." Litchfield condemns Dr. Fischer's theory of nephritis as a gratuitous hypothesis, and says his recommendations for treatment are not justified by physiologic facts or clinical experience.

PLACENTA PRAEVIA.

The treatment of placenta praevia is the subject of an article by E. P. Davis, Philadelphia, (*Journal A. M. A.*, July 25, 1914), who says that it is an accident that causes hemorrhage and infection, and demands hospital facilities and experienced operators. Logically, he says, it is a variety of ectopic gestation, and as regards infection it is usually more dangerous than the condition ordinarily so called. Any vaginal hemorrhage in a pregnant woman is a warning of danger, too frequently neglected because it is often painless and the dangers of infection must be kept in view. Manipulation and vaginal examination and the use of the tampon should be avoided as far as possible. One classification of these cases is those where the os is not entirely covered by placenta and those where it is. In the hands of the general practitioner and in private houses the best treatment in the first class of cases is to rupture the membranes as extensively as possible when dilatation permits, and to give the patient tonic doses of strychnin and allow her to deliver herself, or at least to try to, before artificial delivery is attempted. In complete placenta praevia in the hands of a general practitioner in a private house, the Praton-Hicks method of bringing down the leg and breach of the child would give the mother the best chance. Anesthesia may be required. The placenta must be perforated by one or two fingers, combined version performed and the leg seized and drawn through the placenta. Under no circumstances should forcible or complete extraction

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be attempted, but a noose or bandage may be slipped around the child's ankle and a moderate weight attached if constant tension is desirable. The mother may then be stimulated as required, ergot and pituitary extract being avoided. Constant observation is demanded until labor finally develops and the fetus, if possible, is expelled spontaneously. Post-partum bleeding must be watched for and, following the delivery of the placenta, the uterus irrigated with hot 1 per cent. dilution of liquor cresolis of salt solution and the uterus, vagina and cervix firmly packed with 10 per cent. iodoform gauze. In hospital practice, with the mother in good condition and the membranes available for rupture, a dilating bag may be introduced and gradually distended, thus securing dilatation of the cervix and pressure on the placenta. With membranes unavailable and cervix resisting prompt abdominal section will give best results for mother and child. Davis' experience with this comprises sixteen cases. "The method of operation consisted in opening the abdomen, turning out the uterus, incising it and immediately removing its contents. It was interesting to observe how completely hemorrhage ceased when the uterus was emptied. The uterine cavity was then thoroughly irrigated with hot sterile salt solution and packed firmly with 10 per cent. iodoform gauze carried through the cervix into the vagina. The uterus and abdomen were closed in the usual manner. The vagina was sponged out with mercuric chlorid solution and firmly tamponed with sterile or mercuric chlorid gauze. During the operation the patient received intravenous saline transfusion, and strychnin, digitalin and atropin were given hypodermatically." All the mothers recovered and six of the children.

HYSTEROTOMY.

Since his paper was read before the Section on Obstetrics in 1912, J. B. Deaver, Philadelphia (*J. A. M. A.*, July 25, 1914), reports that he has had twenty-five cases in which he has performed hysterotomy, in addition to the fourteen then reported. He gives the general indications for the operation as "(1) to establish a prompt and certain diagnosis when a reasonable suspicion exists of malignant disease of the interior of the

uterus; (2) for the prompt termination of pregnancy in cases in which life is acutely endangered by the continuance of that condition." Of the twenty-five operations during the past two years, sixteen were performed for indications of the first class and ten for indications of the second, and brief summaries of the cases are given. He does not advise hysterotomy for all cases of toxemia of pregnancy. With an early diagnosis palliative treatment can be tried, but if toxemia increases in spite of it, the pregnancy must be terminated. If the condition has been detected early there is ample time for the induction of premature labor, but in neglected cases and in the event of eclampsia, the quickest, safest and surest method is hysterotomy. It is a rapid and safe method of delivery, taxing the vital powers but little, which cannot be said of the other methods of inducing premature labor. The absolute command of hemorrhage which the surgeon has is in contrast with the danger from bleeding with the ordinary procedures. Vaginal incision of the anterior wall of the uterus has been advanced as a substitute and as a safer operation than suprapubic hysterotomy, but it fails to expose the entire fundus or the cornua, and there is real danger to the bladder and urethra. Palpation will not suffice for the diagnosis of early cancer of the uterus, a percentage of which can be detected by hysterotomy, which will also show the true cause of bleeding from other sources, as in hyperplastic endometritis, polypi, etc. The impossibility of thorough removal of a hyperplastic polypoid endometrium, by blind scraping, can be appreciated only when such an uterus is opened and the actual condition seen. "The operation itself is simple. The abdomen is opened by the usual paramedian incision. The uterus is grasped in volsellum forceps and carefully packed off by moist gauze pads. The anterior surface is then incised down to the peritoneal reflexion of the bladder, which may be carried forward if necessary. With small retractors the interior may be completely exposed to view. If the uterus is to be allowed to remain the incision is closed by buried layers of chromicized catgut sutures extending down to, but not through, the endometrium. Accurate apposition is essential. A running seromuscular stitch of linen placed close to the edge and invaginating the serosa completes the closure."

LEPROSY CONTROL.

Isadore Dyer, New Orleans (*Journal A. M. A.*, July 25, 1914), says that the modern interest in leprosy was excited in the decade between 1880 and 1890 and was increased by the British Commission report on leprosy in India. The Berlin conference of 1897 was the result, and its recommendations as regards isolation of lepers are quoted. The United States is one of the few countries that has ignored these findings. There have been two leprosy surveys by the United States Public Health Service, and the first report found 278 cases, 155 of them in Louisiana, and the rest scattered. The second report, he believes, showed practically the same results. He considers these figures far below the truth and without statistical value. Since 1894 the Louisiana Leper Home has cared for nearly as many lepers as the Public Health Service Report showed for the whole United States. It has a gradually increasing population of nearly 100 inmates. Texas has a number of cases, about twenty-five known, and estimated at twice that number; Florida has a number of cases, and Mississippi and Alabama. In all of these states the majority have originated there. California has had about thirty cases under control for a number of years. New York has a number of cases and they are scattered through other states. The disease is wide-spread and without much hindrance or control, and the easy entrance from foreign countries is shown by the New York clinics. In the winter of 1911-12 seventeen were shown at a meeting of the Academy of Medicine, only two or three of them native born. The indifference of some states is in marked contrast to the hysteric activity of others, and the federal government has been apathetic until now to this question. In our outlying possessions there are large provisions for leprosy, and Dyer asks why more has not been done at home. It is true that good work has been done in the study of the disease and more in the care of it in this country than in the colonies, but how much more, he says, could be done with governmental control and governmental opportunity. The foci of the disease are already recognized in Minnesota, New York, California, Louisiana and Texas, and the sporadic cases in other states indicate new possible areas of infection. He reproduces the Lafferty bill that



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has been before Congress for a year for a national leper asylum, and says that it should become a law and its provisions carried out at once. These cases could be studied according to their type, and stage and sanitary conditions provided for treatment and a possible cure.

A NATIONAL LEPROSARIUM.

W. C. Rucker, Washington, D. C. (*Journal A. M. A.*, July 25, 1914), says that the problem of the control of leprosy presents many perplexities. We believe that we have discovered its cause, but its mode of entry into the organism, the effects of the different strains and its incubation period are as yet unknown. The role of rodents and insects in its transmission has been suspected, but we have no positive knowledge and there is no certain means of diagnosis in its earlier stages. No satisfactory method of treatment has been devised. The period of its greatest infectivity is unknown. We know that there is no racial immunity, but that it exists in all parts of the globe and that cleanliness and segregation are our only weapons against it. Add to this the facts that individual and community fear of the disease amounts to a very leprophobia, that there are several well-established foci in the country, and that it is slowly but surely on the increase, many cases being probably unreported. When lepers are segregated and properly cared for, the disease dies out, and it has been made notifiable in most of the states in three of which leprosariums have been established. The expense per capita, however, is very great, owing to the small number in each. This is attributable in part to the general desire for the establishment of a national leprosarium, and another factor in bringing about this feeling among thinking men in the inhuman treatment which lepers receive on account of the common fear of the disease. Many other countries of the world have leprosariums, though far less wealthy than the United States. The number at present with us is comparatively small, and if the disease is fearlessly attacked its control will be relatively easy. It spreads very slowly, but when it has once spread it never recedes unless active measures are employed. For this reason Rucker offers a rough draft of what

seems to be appropriate legislation on the subject calling for the foundation of a national leprosarium where lepers could be sent from any state and properly treated. This draft is given with his article.

PERICARDITIS.

R. L. Wilbur, San Francisco, (*Journal A. M. A.*, July 25, 1914), discusses the therapeutics of pericarditis, calling attention to the accessibility of the pericardium for local and surgical treatment and the possibilities that the future may have. Induced pericarditis in animals offers a good field for study in this direction. The early diagnosis of dry or serofibrinous pericarditis permits the most effective treatment and must be based largely on (a) vague feelings of pain in the chest or actual pain; (b) cardiac irritability, and (c) friction rub. Early aspiration, preferably at the left of the nipple line, is of value in the diagnosis of effusion, and tapping should be practiced when the heart's action is disturbed from apparent increase of intrapericardial pressure. He recommends the Brauer method being more often used where there are evidences of pericardial adhesions and early signs of heart hypertrophy or dilation. It will, he thinks, diminish disability and prolong life. The pain of pericarditis (acute or chronic) should be carefully differentiated from true angina pectoris. Careful and repeated examinations for friction rub should be made over the whole cardiac area in patients with precordial vein.

CARDIOVASCULAR DISTURBANCES.

L. H. Newburgh, Boston (*Journal A. M. A.*, July 25, 1914), reports the results of an investigation made to determine whether the poison of infectious diseases injures the vasomotor mechanism and whether strychnin and caffeine used to stimulate the cardiovascular apparatus do actually have such an effect. He has studied the blood-pressure in forty-five cases of pneumonia as regards the systolic pressure in fatal and non-fatal cases and as to the correctness of Gibson's rule, that low pressure is invariably of evil omen

in pneumonia. The conclusions are: that it is incorrect and that the systolic pressure in fatal cases tends to be higher than it is in the recoveries. The rate of the pulse and not the level of the pressure is the chief factor in determining whether the pressure will fall below or rise above the pulse and the course of the blood-pressure does not suggest that there is failure of the vasomotor mechanism in pneumonia from the toxin of the disease. He gives the details of the method used in studying strychnin and concludes that even when given to the point of toxicity, it does not have any beneficial effect on cardiac compensation. In infectious diseases and hypotensive cases, including pneumonia, typhoid, tuberculous and intestinal infections, delirium tremens and shock, eight times out of seventeen there was no change in systolic pressure; in nine out of seventeen there was a small brief rise, inconstant and unreliable, and in no case was there any clinical improvement. Nine times out of thirteen there was no effect on the diastolic pressure and eleven times out of sixteen the pulse showed no change. It could not be demonstrated with the method used that either sodium sulphate or caffein sodio-salicylate has any beneficial effect on cardiovascular disturbances in the infectious diseases.

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INTELLIGENCE TESTS.

D. D. V. Stuart, Baltimore (*Journal A. M. A.*, July 25, 1914), calls attention to the defects in the intelligence tests employed, especially the Binet-Simon test now in such general use. As part of a general examination and as giving approximately the extent of mental development, it is of undoubted value, but it cannot be considered as in any way comparable in accuracy to a chemical test, as seems often to be supposed. There are many things that may affect its value. The possibility of fatigue on the part of the subject and to a lesser degree of the examiner is one of these. The patient's training and home environment is another thing that may effect its value and most important of all, in Stuart's opinion, is the personal equation as regards the subject and examiner. A timid and sulky patient and a brusque and harsh examiner make a bad combination and on the other hand a too lenient one often unwittingly suggests the correct answers. Finally the patient's condition as to health may affect his standing in the intelligence tests. All these points are too often ignored and to support his contention he gives a table showing wide differences in the results of examinations

by students in Johns Hopkins University. He says, "If intelligence tests, when conducted by examiners with a knowledge of psychology and psychiatry, show such great divergence in their results, the assumption seems justified that the variation would be even more marked in inexperienced hands. It would also seem that it is time to stop regarding such tests as an infallible method of determining a patient's degree of mentality, independently of other considerations."

THE ADRENALS AND THE PULSE-RATE.

The assertion that the adrenals slow the pulse-rate is disputed by R. G. Hoskins and C. R. Lovellette, Chicago (*Journal A. M. A.*, July 25, 1914). Normal epinephrin discharge, they say, can be closely simulated by injecting the drug slowly into a femoral vein. They have experimented in this manner on dogs and give a tabulation of their results which are summed up as follows: "Intravenous injections of epinephrin under conditions closely simulating adrenal discharge cause not only increased blood-pressure, but, generally, also accelerated pulse. Acceleration of the pulse, therefore, is one of the adaptive functions of the adrenal glands."

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Vermont Medical Monthly

Official Organ of the Vermont State Medical Society.

Vol. XX, No. 9.

Burlington, Vt., September 15, 1914

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sanctum.
How it makes our pulse throb, how it makes
our heart dance!
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—From *Critic and Guide*.

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THE UNION OF THE SEAS

*By JUDGE WALTER MALONE,

Circuit Judge of the United States in Tennessee.

—

* * * That nation cannot stray afar that keeps
Ever before its mind the simple worth
And courage unadorned of those plain men
Who freed this land of pestilence—those men
Of unromantic lives, in days of prose,
Who yet braved death, giving themselves to
stings

Of poisonous insect pests that bore the seeds
Of the foul plague. Not pompously they went
Into the jaws of Pestilence, and yet
How glorious was their battle! Overthrown,
The enemy they met shall nevermore
Reap his dread harvest. And these heroes died,
Or, hovering near the iron-gated tomb,
Were snatched from death by heaven. Their
names obscure

No poet sings; no magic legendary
Is woven round their story. In their lives
No bugle urged them on, no banner streamed,
No high born lady from her castle tower
Waved them adieu. Above those who are gone,
No marble cenotaph, no eulogy
From lips of oratory, and no shout
From fervent multitudes uplifts in praise.
Yet never rode a knight through Arthur's realm,
Seeking the Holy Grail, that wore a plume
Whiter than their devotion; never a king

Taking his throne on Coronation morn
Wore ermine that was purer!

Then, O Lord,

Make us esteem their names forever! Make
Thy servants ever emulate their deeds;
Make us unselfish, striving for the good,
As they strived, hopeless of reward. And make
Thy servants purify the world
Of all uncleanness of the heart, as they
Saved pure men's bodies from the unclean
plague!

All these things grant us, Lord. And speed that
day,

That day desired through long milleniums,
When man is truly worthy of his Sire.
And as we now in wedlock shall unite
These mighty oceans, grant that all the tribes
And kingdoms of the world shall soon be one,
Blest with one common hope, one end and aim,
One stainless flag, one Fatherland, one God.

—

*Written in commemoration of the opening of
the Panama Canal. Given here only in part.—
Western Medical Review.

—

Ross gives 10 to 12 drop doses oil of cinna-
mon in water, or dropped upon cubes of sugar,
every two hours in the treatment of influenza.
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THE MENACE OF THE FEEBLE-MINDED.

The economic and social problems connected with the feeble-minded are of far greater importance than the average "man on the street" realizes. Whatever the cause, the fact is that this class is increasing enormously in all civilized countries. Some figures in a report of the Committee of Visitors of the State Charities of New York are commented on in *The Journal of the American Medical Association*. According to this report, there are in New York, at present, 32,000 feeble-minded persons. Of these, 4,900 are provided for in institutions especially designed for their care, and 4,500 in other institutions, leaving at large 22,600. It has been estimated that of the 32,000 feeble-minded, 10,000 are girls and women of child-bearing age, 1,750 of whom are cared for in institutions designed for the care of such persons, and 1,625 are confined in reformatories, prisons and almshouses, leaving about 7,000 at large in the community.

Goddard estimates that, in the way of spreading disease and immorality and increasing the stock of feeble-minded, a girl or woman of this class, of child-bearing age, is three times as great a menace to the community as a feeble-minded boy or man. The Royal Commission of England reports that in that country the feeble-minded are increasing at twice the rate of the general population. The importance of providing, by the establishment of additional institutions and the completion of those under way, for the custodial care or control of a greater number of feeble-minded cannot be overestimated. The statements of Amos W. Butler of Indiana to the effect that feeble-mindedness produces more pauperism, degeneracy and crime than any other force, that it touches every form of charitable activity, that it is felt in every part of the state and affects in some way all the people, and that its cost is beyond comprehension, are again quoted as the best argument for the policies advocated.



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THE PURDUE-FREDERICK CO. 135 CHRISTOPHER ST.
NEW YORK.

Vermont Medical Monthly.

VOL. XX.

SEPTEMBER 15, 1914.

NUMBER 9

ORIGINAL ARTICLES.

ANOCI-ASSOCIATION.

BY

GEORGE W. CRILE, M. D.,

Cleveland, Ohio.

The Kinetic Theory of shock postulates (1) that there is in the body a group or chain of organs whose primary function is the conversion of the latent or potential energy derived from the environment into kinetic energy as an adaptive response to stimulation; (2) that among these kinetic organs are the brain, the suprarenals, the liver, the thyroid and the muscles; (3) that all forms of shock are caused by the overstimulation and consequent exhaustion of these kinetic organs; (4) that three of these organs—the brain, the suprarenals and the liver—show histologic changes corresponding to each change in the clinical cycle of shock.

These premises have been established by laboratory and clinical researches in which were studied the energy-producing results of prolonged insomnia, of physical injury alone; of physical injury under inhalation anesthesia; of the emotional stimulation of fear; of foreign proteid and toxic stimulation; of physical injury within the territory of local anesthesia; of injections of strychnin and morphin; of severe hemorrhage.

In our laboratory experiments on animals we found histologic changes in the brain, the suprarenals and the liver, after the prolonged application of any stimulus, and that these changes were identical whatever their cause—whether prolonged emotion, trauma, anaphylaxis, the injection of toxins or of strychnin.

These histologic changes ranged from slight hypochromatism through vacuolation of the cell contents to displacement and fading of the nucleus, the bursting of the cell-membranes and complete disintegration.

We may define *shock* then as the result of an intense stimulation which leads to physical changes in the organs which constitute the kinetic system and which if carried far enough, will exhaust that system.

If this be true, then every adequate stimulus with or without inhalation anesthesia, whether from trauma or emotion, causes the cells of the organs of the kinetic system to discharge some of their stored energy—that is to say, the sight of the operating room, the spoken word implying danger, the taking of the anesthetic, the instrumental injury of tissues in the course of the operation, the traction of the stitches after the operation—all of these are adequate stimuli.

Obviously then, the only practical method of preventing the consumption of the energy stored in the kinetic system is the development of a technique which will exclude the stimuli of the special senses and the stimuli of common sensation.

Is there a single anesthetic that will exclude all the nocuous or harmful physical and psychical stimuli which accompany a surgical operation?

By blocking nerve conduction local anesthetics obviate the shock-producing effects of local operative injury but they do not protect the patient from destructive psychic strain; inhalation anesthetics exclude psychic stimulation but do not exclude operative stimulation; and general anesthetics introduced hypodermically, being uncontrollable, are excluded on principle. Each anesthetic covers a part of the field, but there is no single agent that *alone* can produce *anoci-association*, which is the goal of operative surgery. We, therefore, do not advocate ether alone, nor chloroform alone, nor nitrous oxid-oxygen alone; we do not advocate local anesthesia alone, nor morphin and scopolamin alone, nor spinal anesthesia alone, but through *selection* and *combination* of anesthetics we aim to attain an anesthesia that will exclude all shock-producing stimuli and thereby attain *anoci-association*.

We propose to discuss the technique by which a state of *anoci-association* has been attained in

certain major operations; to show that not only the immediate operative results but the post-operative morbidity and mortality as well are lessened or eliminated. It may be well first, however, to say a few words regarding the *anoci-association* environment which should be sought and which has a scarcely less important bearing upon the outcome of the operation than has the operative technique itself.

The surgeon's best assurance for the successful outcome of a serious operation would be to have the patient come under his care long before the development of the trouble from which relief is desired. Unfortunately or fortunately, according to one's point of view—this possible factor of success is not within the reach of any individual or surgeon. The surgeon, however, who too often must deal with patients heavily handicapped by factors which, if known in time, might have been controlled, is finding that by a careful, unhastened, patient preparation of his patient he may do much to counteract the adverse conditions.

In other words, the work of the surgeon does not begin in the operating room, nor with the immediate mechanical preparation of the patient for operation, nor does it end with the healing of the physical wound. In the operating room and during the process of healing also the patient must be considered *as a whole*. That is, the surgeon, and the members of his office staff, the hospital superintendent, the interne, the nurse, the orderly—everyone who comes into relation with the patient must bear in mind that even apparently slight factors may contribute—mightily even—to his ultimate welfare. Already we have come to realize to some extent that human beings are integral organisms and that one part cannot suffer without the coincident suffering of all the rest. Yet we are prone to forget that the reverse of this proposition must be true also—that any factor which contributes to the welfare or improvement of the condition of one part will contribute also to the welfare of all the rest.

We have stated the importance of the emotional factor in producing shock. If the natural fear of the approaching ordeal, which is felt by every normal individual be augmented by tactless words in a surgeon's office; by an ungracious reception at the hospital; by inconsiderate treatment by a nurse or orderly; by the sound of clanking instruments; by the rough or

forced administration of an anesthetic; then the resistance of the patient, which is already depleted by his diseased condition, will be lowered still further. No matter how perfect and non-shocking in itself may be the technique of the operation, the results are still prejudiced by these other adverse factors.

By a cheerful preoperative environment; by a definite dulling of the nerves through the administration of a narcotic; by a nonsuffocating odorless anesthetic; by a local anesthetic to cut off all afferent impulses during the course of the operation; by a second local anesthetic of lasting effect to protect the patient during the painful postoperative hours; by gentle manipulation and sharp dissection—by the combination of all these methods—the patient is protected from damage from every factor excepting those which exist in the diseased condition from which relief is sought.

The *anoci-association*, however, does not end in the operating room, nor with the return of the patient to his bed. Postoperative environmental conditions are no less essential than preoperative. To perform a shockless operation on a bad risk and then have the patient distressed and nagged by poor aftercare is like putting tacks in the smooth pavement in the path of an automobile after driving it safely over rough roads. To achieve the shockless operation the patient must be received and carried through a complete *anoci-association*; not only the surgeon himself, but assistants, internes, anesthetists, hospital officials and nurses must be intelligently and specially trained—but above all, it must be borne in mind that no detail is too petty for the careful attention of the surgeon himself.

GENERAL TECHNIQUE.

Morphia and Scopolamin: To mitigate the preoperative dread and to facilitate the induction of anesthesia, a solacing dose of morphin and scopolamin (usually morphin 1-6 gr., scopolamin 1-150 gr.) is given an hour before the operation to all patients excepting the aged, the very young, and those whose feeble condition contraindicates the use of these narcotics. The use of morphin serves the double purpose of diminishing the preoperative psychic strain and of actually preventing, to some extent, the damage to the cells of the kinetic organs by the trauma of the operation. Laboratory experiments have shown that in morphinized animals

subjected to trauma, the changes in the brain, the suprarenals, and the liver are less than in traumatized animals without this protection; indeed the fact that deep morphinization will almost completely prevent shock has been abundantly proved in both laboratory and the clinic.

The protective effect of morphin is remarkably exhibited in those cases of exophthalmic goiter in which some exceptional local condition causes a break in the complete *anoci-association* of the patient, as a consequence of which the pulse and respiration increase markedly during or after the operation. In these cases, if morphin be given in repeated doses until the respiration and pulse are held stationary or fall, the dangerous exhaustion of the patient will be avoided. The morphin may be given at any time during or after the operation when it is seen that the patient's energy is being expended at too rapid a rate.

Morphin is especially useful also in those cases of acute infection in which emergency operations must be performed. In such cases morphin affords a double protection—it protects the kinetic system against both the infection and the operative trauma. Here also morphin should not be given in one dose, but in repeated doses until the physiological effect is produced. This point will be indicated by the reduction of the respiration to the normal rate or less.

In brief, by proper use, morphin can control the metabolic processes. It should be added that it is not our intention to suggest an increase in the use of morphin in average cases, but to emphasize its usefulness when employed in physiological dosage in certain exceptional cases.

NITROUS-OXID-OXYGEN.

Nitrous-oxid-oxygen is the anesthetic of choice as it is odorless; a few inhalations are sufficient to induce unconsciousness; it is less apt to cause nausea than is ether; as it is not a lipid solvent it to a given extent protects the cells of the kinetic organs from exhaustion, and it therefore does not impair the immunity of the patient.

In the choice of the anesthetic, however, it should be emphasized that *the patient is the first consideration* and not the prejudice of the surgeon for a certain method. If nitrous-oxid-oxygen does not fully anesthetize the patient, as may happen in some cases and frequently does

with inebriates, then sufficient ether should be given to attain the desired end.

It should also be borne in mind always, that while nitrous-oxid-oxygen is the *safest* of all anesthetics in the hands of an *expert* in the technique of its administration, it is perhaps the most *unsafe* in the hands of the *inexperienced* and, therefore, it should never be administered except by an anesthetist specially trained in its use.

The anesthetists at Lakeside Hospital and Dr. Teter have administered nitrous-oxid-oxygen 18,250 times for general surgical operations; and 16,714 times for oral operations—making a total of 34,964 general anesthetizations without a fatality.

NOVOCAIN.

Every division of a sensitive tissue—that is, of a tissue supplied with noci-ceptors—is preceded by the injection of novocain in 1-400 solution. This is used routinely in all parts of the body, in all ages, in the debilitated and in the strong, in small and in extensive operations under all sorts of conditions. There are certain salient points to be observed in its use:—the tissue to be divided should be completely infiltrated—no nerve filament should be omitted. One might think of the novocain as a stain and consider that only the stained parts are ready for the knife. The infiltrated parts should be subjected immediately to pressure, as firm pressure with the hand greatly increases the anesthetic area of novocain.

QUININ AND UREA HYDROCHLORID.

To minimize postoperative discomfort, especially in abdominal operations, quinin and urea hydrochlorid in a 1-6 to 1-2 per cent solution is injected *at a distance* from the wound. The effects of this local anesthetic last for several days, so that by its use the patient is protected from noci-impulses from the operative field until the healing process has well begun. This local anesthetic can be safely used in all cases in which no infection is present, but is unsafe in the presence of infection because it to some extent diminishes the resistance of the tissues. Quinin and urea usually cause some edema of the infiltrated part which may last for weeks, or even for a month or more, but which ultimately disappears.

Gentle Manipulations—Sharp Dissections: The phylogenetic facts upon which the kinetic theory of shock is founded indicate the necessity for the use of the gentlest manipulations throughout the operation. In this respect the surgeon should at all times govern his movements as he would if the patient were to be conscious of each step in the operation. Pulling, tearing and crushing manipulations awaken phylogenetic noci-associations with consequent activation for defense and, therefore, exhaust the kinetic organs; and in addition actual coincident trauma is produced by traction in the tissues beyond the zone which is protected by the infiltration of the local anesthetic. On the other hand the division of the tissues with a sharp scalpel is a form of injury which awakens less phylogenetic association and, in addition, produces the least amount of damage to the tissues. Gentle manipulation and sharp dissection by producing the least amount of tissue injury in turn necessitates the minimum amount of healing. *Clean-cut wounds give the least postoperative discomfort.* It should be borne in mind also that trauma, by diminishing their vitality predisposes the tissues to infection. For every reason, therefore, the tissue trauma should be as slight as possible.

In each application of the principle of *anoci-association* the part of the body in which the operation is to be performed must be considered both biologically and pathologically. That is, the technique should be strategically planned to *outwit* the biological defenses; and to cause the least possible further drain on the stores of energy already diminished by the pathological condition from which relief is sought.

To illustrate this point we shall from these two standpoints consider briefly the general application of the principle of *anoci-association* to abdominal operations.

ABDOMINAL OPERATIONS.

Biologic Considerations: Adequate stimulation of the noci-ceptors implanted in the abdominal wall, like adequate stimulation of the noci-ceptors elsewhere, causes muscular response. In the contractile response of the abdominal muscles, however, an increased intra-abdominal pressure is produced, as a result of which, when the abdomen is opened, the smooth, lubricated, intestinal coils slip with wonderful facility out of the wound. Not only does this expulsion of the

intestines greatly hinder the operator in his work, but it is an additional source of injury to the patient, for the added manipulation of the intestines required to replace them adds greatly to the production of shock.

Muscular contractions of the abdominal wall may be prevented by the administration of an anesthetic which will produce in the brain such a deep state of anesthetic paralysis that no adaptive muscular response will be made to the operative stimuli which are received by the brain-cells. Less muscular relaxation is produced by nitrous-oxid-oxygen anesthesia than by either of the lipid-solvent anesthetics—chloroform and ether. For this reason nitrous-oxid-oxygen—a less paralyzing anesthetic—does not prevent the adaptive contractile response of the strong abdominal muscles during injury to the abdominal wall as completely as either ether or chloroform.

To prevent expulsion of the intestines, therefore, one must either employ the lipid-solvent ether in rather large dosage, or one must prevent the impulses of the operative trauma from reaching the brain. This latter result may be accomplished by the use of either spinal anesthesia or local anesthesia.

(a) *Spinal Anesthesia* would be the method of choice had it not three disadvantages: first,—spinal anesthesia causes a considerable fall in the blood-pressure because it cuts off nerve communication with the vasomotor center in the brain from a large vascular field—the splanchnic territory and the lower extremities; second,—thus far the mortality rate with spinal anesthesia is higher than with ether or nitrous-oxid-oxygen; and third,—the patient being conscious undergoes a heavy psychic strain. Minor disadvantages are postoperative headache and the fact that analgesia is occasionally incomplete.

(b) *Local Anesthesia:* There is ample evidence that many abdominal operations may be painlessly performed under local anesthesia alone: but as with spinal anesthesia in the average patient, that stringent and most exhausting emotion—fear—is excited by the knowledge that the abdomen is open, that serious conditions may arise, and that grave consequences may ensue. Such a psychic ordeal may break down the bravest patient and cause not only mental distress, but, as we have shown already, actual physical injury as well. The flushed, or pallid and sweat-covered face of the conscious patient

portrays all too well his deep apprehension and distress—far beyond, the possibility of assuagement by any effort on the part of the operator. In routine operations, therefore, the *laparotomized patient should be asleep*.

General Technique: Excepting to the very young, the aged and patients with depressed vitality, 1-6 gr. morphin and 1-150 gr. scopolamin is administered one hour before the operation. The young, the old, and the handicapped are not given this preoperative sedative dose.

The skin is infiltrated with novocain in 1-400 solution in such a manner as to produce a broad, white elevated strip of skin within which—*strictly within which*—the incision is made. The razor-edged knife at a low speed so controlled that the line of incision may not pass the anesthetized zone divides the skin and the underlying fat. As fat is but sparsely supplied with noci-ceptors, this tissue may be divided down to the external fascia without novocain infiltration.

The external fascia is next infiltrated carefully and is divided by the controlled passage—*not sweep*—of a sharp scalpel, and then in succession the muscles, the posterior sheath and the peritoneum are anesthetized and divided.

As soon as the abdomen is opened quinin and urea hydrochlorid in a 1-6 to 1-2 per cent solution is used in a massive infiltration of the abdominal wall—*at a distance from the incision*—the infiltration being so complete that the entire operative field is physiologically severed from the brain. The effects of quinin and urea hydrochlorid last for two days or more and minimize postoperative shock and gas pain.

If the principle of *anoci-association* be carried out in every detail, then, no matter what may be the location or the length of the abdominal incision, the intestines will be within the abdominal cavity and the abdominal muscles will be completely relaxed. Under these conditions the entire abdomen may be explored without awakening the noci-ceptor sentinels. If the incision be long, the entire wall may be elevated with the warm, moistened gloved hand and most of the viscera inspected literally. The hand may then go gently but completely over every viscus and explore every nook and corner of the abdomen without disturbing the original, complete muscular relaxation.

It may happen, however, in spite of biologic strategy, that the conditions which are enumerated make it impossible to avoid the stimulation

of noci-ceptors—so that muscular contractions are present. In such a case the nitrous-oxid-oxygen should not be pushed an atom beyond the pink stage, but ether should be added until the needed relaxation is reached—a few minutes—and but little ether is usually sufficient to attain this end. In rare instances ether may be used during the delivery of an adherent tumor.

Owing to the complete relaxation of complete *anoci-association* but few if any intra-abdominal pads are required. Nowhere is the law of consequences more truly exemplified than in abdominal operations. In no instance does the punishment more truly fit the crime. Sow roughness and reap a harvest of postoperative distress.

POSTOPERATIVE MORBIDITY.

The final proof of the value of a surgical principle is found in the clinical results of its employment. After operations performed under ether anesthesia alone, surgeons are confronted constantly with a familiar train of disastrous sequelæ, painful to the patient and discouraging to the physician. The immediate sequelæ include gas pain, nausea, and aseptic wound fever while the later results range all the way from painful scar alone to the long train of symptoms accompanying "postoperative neurasthenia."

Here again biologic considerations teach us the cause of each of these disturbances and show how and why they may be obviated by the strategical maneuvers of *anoci-association*.

It has already been stated that a study of the pulse during and after the operation perhaps gives us our best clue to the value of the protective technique of *anoci-association* and explains the strikingly decreased postoperative morbidity after anociated operations. A comparison of 500 cases operated upon under ether and 500 under *anoci-association* showed in the ether cases an increase of 21.6 beats during operation, and of 10.5 in the first twenty-four hours after operation while the *anociated* cases showed a *fall* of .83 during the operation and a rise of but .85 beats during the twenty-four hours after operation.

Gas Pain: Postoperative gas pain can be explained as a biologic adaptation to overcome infection since in the course of evolution, all abdominal penetrations were infected. As a nat-

ural sequence a protective mechanical activity within the abdomen was evolved as a means of protection. Most infections may be overcome if they can be localized; to accomplish such a localization of an infection in the abdomen, the intestines and the abdominal wall must be kept fixed against each other. To this end, each must be inhibited; the intestine must be distended with gas, the abdominal wall must be rigid. If the intestine be distended with gas and fixed, then digestion must cease. If digestion be arrested, then there is anorexia, or even vomiting to expel food from the stomach. These facts show us how postoperative gas pains are due to a biologic adaptation to overcome infection, and explain their resemblance to incipient peritonitis. Nature does not depend upon the surgeon, or perhaps she knows the surgeon too well. The test of this hypothesis is easily made. If the brain through which this adaptive response is made is kept in ignorance of the incision into the peritoneum (a) by progressive novocain blocking throughout the operation, and (b) by postoperative quinin and urea blocking to break later communication with the brain through stitch tension, then there should be no gas pains. Clinical experience has abundantly confirmed this hypothesis. It must be remembered that if a single nerve filament escapes the block, there will be gas pains.

Painful Scar: The lesion which produces a painful scar is in the brain, not at the site of the wound. It is explained by a fundamental principle of nerve conductor; that is, that a strong traumatic or psychic stimulus produces some change in the effect of which is to lower the threshold of that arc, conductivity along its cerebral arc, so that mere trifles become adequate stimuli. Most familiar examples of this result are the sensitiveness of limbs after fractures and the painful stumps of crushed limbs. Now if an operation be so performed that no strong stimulus reaches the brain, either during or after the operation, then the threshold of the cerebral arc from the wound will not be lowered. Since the threshold is not lowered, contact with the scar or any injury to that part will have no more effect than will contact with any other part of the body. Hence, we see how painful scar may be prevented by complete *anoci-association*. Our clinical data seem to support this hypothesis, although these have not as yet been fully worked out.

Nervousness: The explanation of "painful scar" applies also to postoperative nervousness. When in the night one is threatened with an unknown danger the brain threshold is always lowered, apparently as an adaptation to the more swift and accurate detection of danger. As stated above when one has received a crushing physical injury, there is a universal lowering of the threshold.

During these states of tenseness minor stimuli have major effects, or, in other words, one is "nervous."

The subconscious brain being tortured directly during unblocked operations under inhalation anesthesia, the resultant general effect on the brain thresholds is demonstrably the same as if the injury had been inflicted without anesthesia—that is, after the ordeal of punishment of the subconscious mind during an operation the patient emerges "nervous"—"exhausted"—and since a low threshold is lavish in its waste of nervous energy recuperation is slow. Hence there results a period of postoperative nervousness, of postoperative loss of efficiency. It is obvious—and clinical experience abundantly proves—that the threshold is preserved by complete *anoci-association*, hence the unpleasant, damaging postoperative phenomena are avoided.

Aseptic Wound Fever and Postoperative Hyperthyroidism: Since it is a physical law that any form of force may be converted into heat, and that heat thus produced, if not at once transformed into motion, must increase the temperature of the body affected, we see readily why any stimulus, mechanical or physical, which normally would cause increased motor activity must cause a rise in temperature if complete motor expression is impossible. Anything, therefore, that drives the motor mechanism of the body beyond the point of normal expression will cause fever. Anger, athletic contests, fear, physical injuries, all produce a rapid oxidation of certain body compounds too great for complete translation into motion.

In operations under general anesthesia only, we expected routinely to see some postoperative rise of temperature as a result of the suppressed power of motor response to the physical and psychical injury; but by the use of *anoci-association*, both during and after the operation, we discovered a change of postoperative temperature and pulse-rate. We were therefore forced to the conclusion that, barring infection and the

absorption of hemoglobin, postoperative fever is the result of increased oxidation, this being in turn the result of the psychic and traumatic stimuli of the operation to which natural response has been denied.

These observations led us to a further knowledge of the phenomena accompanying Graves' disease. This disease being due to a disarrangement of the general motor mechanism whereby the threshold of the brain to both psychical and traumatic stimuli has been lowered in varying degree, the stimulus which in the normal individual would cause no appreciable change in pulse or temperature, will, in a case of Graves' disease, drive the brain and body so fast that greatly increased motor activity and a rise in temperature are caused. Anything, therefore, that raises the threshold of the brain to stimuli must diminish the susceptibility to pulse and temperature changes in the patient suffering from Graves' disease as well as in the normal individual. This explains why patients under morphin or in a stupor show little change after excitation, and why an operation performed under *anoci-association* is followed by diminished or no aseptic fever and in Graves' disease by no so-called "hyperthyroidism."

Nausea and vomiting—Digestive Disturbances: The intensity of these postoperative symptoms depends upon the location of the operation; on the kind of general anesthetic which is used; on the amount of postoperative pain; and on the gentleness or roughness of the operator. Appetite may be driven away and digestion may be broken down by even a simple operation on any part of the body if it be crudely and roughly performed under nauseating ether anesthesia; if the tension of the stitches be too great and the dressings too tightly applied.

On the other hand, nausea and vomiting may be obviated and the digestive impairment will be minimized by the employment of nitrous-oxid-oxygen anesthesia, sharp knife dissection, the gentle manipulation of tissues, cautious dispatch in operating, complete nerve blocking during the operation, and for several days thereafter, the careful insertion of stitches and application of bandages. No matter how extensive or what the location of the operation, if it be performed under complete *anoci-association*, a nursing mother will be able to give each regular feeding, and the babe will give no token of digestive disturbance. There may be morphin

nausea, however, to the degree ordinarily caused by that drug.

Backache: In the associated operations the patient rests on a water bed. For this reason and since the muscles are not relaxed under the mild nitrous-oxid-oxygen anesthesia, heavy strain on the ligaments and joints is eliminated, and backache is averted excepting that backache which is produced by the technique of certain abdominal operations, such as supravaginal hysterectomy. This too may be avoided by the complete infiltration of the stumps with the nerve-blocking anesthetic. In our comparative study we found that in the postoperative bedside notes of the 500 cases operated upon under ether anesthesia, backache is mentioned in 91 cases, while in 500 cases under *anoci-association* it is mentioned but 30 times.

Infection: Ether anesthetizes the phagocytes as well as the man, and so places the patient in the position of a citadel when at the hour of assault by the enemy, the defenders are asleep in the trenches. If nitrous-oxid-oxygen be used, however, the phagocytes remain ready for action and the danger of infection is, therefore, lessened.

Nephritis: The lipoid-solvent action of ether is sufficient reason for the ether nephritis as the renal epithelium contains much lipoid substance. Then too, other products of ether solution in various parts of the body are thrown on the kidneys for elimination. The use of nitrous-oxid-oxygen relieves the kidneys from this strain and the danger of nephritis from this cause is eliminated.

Pneumonia: Many theories have been advanced to account for the more frequent occurrence of pneumonia after operations on the upper abdomen than after operations in the lower abdomen, on the back, or on the extremities. That pneumonia is not due to ether alone is proved by its occurrence after operations under local anesthesia; that it is not due to infection alone is shown by the fact that it occurs as frequently in connection with uninfected as with infected wounds; that it is not due to emboli or thrombosis alone is evident since superficial wounds are rarely followed by pneumonia.

The clue to the real cause was found in a comparison of the postoperative behavior of patients operated upon under the old nocuous technique with those operated upon under *anoci-association*. After the nocuous operation the wound is tender. Now the upper abdominal

muscles especially have important respiratory functions. In each respiratory movement these powerful muscles pull on the stitches which hold together the divided wall. The exquisite pain produced by this respiratory pull causes an inhibition of the muscular contraction on the side of the incision, or on both sides of the incision if it be medium. As a result, the excursion of the lower chest wall is diminished so that the lower lobes of the lungs cannot be filled completely. That a lessened exchange of air in the lower lobes predisposes to pneumonia is proved by noting the predisposition to pneumonia in cases of localized pleurisy, in which the pain causes an inhibition of free excursion in the part of the chest which is involved. The resultant pneumonia occurs in that portion of the lung whose free action is inhibited. After gall-bladder operations pneumonia begins not in the left but in the right lobe, whereas, were the pneumonia embolic in its origin the lobes would fare alike.

The diminution in the number of cases of post-operative pneumonia since the adoption of the technique of *anoci-association* is the final proof of this reasoning as to its cause. Because of the lack of local tenderness in the field of operation produced by the technique of the operation itself and by the postoperative nerve blocking, there is no inhibition of the respiratory excursions. This also without doubt explains the reduced mortality of operations for umbilical hernia performed with the transverse incision.

My own clinical observations here reported have been confirmed by the personal experiences of my associates and of Bloodgood, Cabot, Codman, and a number of other American surgeons; of Moynihan and others in England. The statements made have been based upon a critical study of the clinical data of operations performed at the Lakeside Hospital under ether alone, under nitrous-oxid-oxygen alone, and under *anoci-association*.

Were it possible to express the subjective sensations of the patient the proof of the value of *anoci-association* would be even more striking. There is no longer any need of the postoperative recovery room; the work of the nurses is greatly minimized; and the clinical aspect, both in and out of the operating room is altered.

Not only the lessened post-operative morbidity, but a reduced mortality rate also bears wit-

ness to the value of the technique by means of which *anoci-association* is attained. A study of the statistics of the Lakeside Hospital shows that in 1908, the year before the adoption of the principle of *anoci-association*, the mortality rate of all operations performed by my associate Dr. Lower, the members of my staff and myself was 4.4 per cent; in 1912 the mortality rate had fallen to 1.9 per cent; and last year, 1913, to 1.8.

INTESTINAL SHORT CIRCUIT FOR INTRA ABDOMINAL TUBERCLES WITH REPORT OF CASE.*

BY

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Short circuiting the large bowel is rather a new departure in surgery. This form of treatment opens up a new field for diagnosis and surgical treatment. That grand man of London, Sir William Arbuthnot Lane, was the pioneer in this method of treating certain diseases of the human body.

It is with no idea of originality that I bring this subject forward at this time but rather to perpetuate certain ideas which I picked up at Guy's Hospital while studying with Sir William. In his clinic one cannot help but be attentive every moment since the theories brought forward and excellent results of large amount of surgery of the intestines at once impresses the seeker for knowledge.

Sir William avers that general surgery today is, for the most part, dealing with end results. He believes that gall-stones, thyroid disease, ovarian cysts, tuberculosis (especially that involving intra-abdominal structures) and rheumatic tendencies are the direct end result of auto-intoxication, and that many other conditions such as breast changes et cetera, might be brought into this field. In this paper I desire to deal entirely with cases having intra-abdominal tubercles. I believe this operation is specific in such cases. In no wise do I care to comment upon Lane's views for other conditions.

The writer had the pleasure of seeing many

*Read at the Annual Meeting of the New Hampshire State Medical Society.

cases in Sir William's clinic at Guy's from the time of entry to the time of discharge. The extensive changes in the human economy as a result of short circuit or colectomy were, to say the least, wonderful. The general appearance of improved health was marked. The hemoglobin count would rapidly increase after these operations; weight was readily increased also.

Sir William has a technique of his own which must be carefully studied in detail. To me this seems the all important part for the secret lies in the following along each step systematically. Therefore upon returning home I resolved to sift

marked influence upon intra-abdominal tubercles. It is along the lines of this theory that Sir William has carried out the practical side of the cases. In the place of giving the lactic acid bacillus or the bacillus *Bulgaricus*, to counteract the fermentative and pathogenic organisms which make their home in the colon, it has been found far better to do a short circuit or colectomy.

Combe in his work on intestinal auto-intoxication as translated by States defines his condition as follows: "Auto-intoxication is a toxemia caused by substances, which are formed through the influences of the vital processes of the or-



Radiograph of Case No. VIII three months after operation. Note patency of anastomosis. Radiograph by Dr. A. W. George, Boston, Mass.

out those cases of intra-abdominal tubercles which came under my care and urge them to be treated along these surgical lines. Some of these cases will herein be reported.

About five years ago Metchinkoff brought forward a theory that the large bowel was only a sewer and not at all necessary for perfect health. In fact, he even went so far as to state that we would all live longer and enjoy better health if five feet, more or less, of the colon was removed. If this be so it must necessarily have a

ganism." Thus it is seen that the toxins must be produced within the body unaided by the introduction of additional organisms from without. Thus would the formation of tubercles be favored.

Assuming that our entire alimentary tract was in perfect working order, we might justifiably believe that we could care for these adulterating materials. On the other hand how many of those suffering as a result of this toxemia, have the small or large bowel kinked, twisted and inter-

fered with by adhesions! How many of us daily see women who are enteroptotic, the stomach, small and large bowel dragged down with the lower abdomen or even into the pelvis! The result is, we are dealing with a person who is not caring for the food products she partakes and fermentative conditions are found all along the alimentary tract.

This auto-intoxication may be a first principle through fermentative changes as a result of improper food, insufficient mastication and ignorance or neglect of the first laws of health and hygiene. As a result we find the person losing weight and the various organs undergoing granular or other microscopical changes.

Following this the loss of intra-abdominal fat has allowed the large and small bowel to fuse in a conglomerated mass in the lower abdomen or pelvis, the kidneys slip down because of lack of proper support and the stomach drags upon its support. We find the mesentery, great and gastro-colic omentum, small or gastro-hepatic and gastro-splenic omentum supporting these structures to a greater degree than is their normal strength. They become thickened, the blood vessels are increased in numbers. When we have such an increase in blood supply we must look for one or two things namely:

1. An increase in the soft structures already present.

2. Additional new structural formation. As a direct result of this dragging, pulling, and increased blood supply adhesions spring forth. We find these adhesions involving various coils of the small intestines. Later these new formations contract and we find kinks at various points along the ileum. Sir William has so thoroughly described these kinks that the principal ones along the lower eighteen inches of the ileum now bear his name.

Given the person with the type of abdominal cavity described above, we will also find that the ascending colon, hepatic and splenic flexures and sigmoid, are encased by a complete covering of new membrane. These are simple adhesions so carefully molded about the large bowel that they form a covering rather than producing kinks. Sir William has christened these formations acquired adhesions. Stiles of Edinburgh has stated that these last mentioned adhesions are always present at birth. He does not believe in the ac-

quirement theory of Lane. However majority rules and for the present it would seem that Lane's theory is more nearly correct. As a result of these adhesions of the small bowel the kinks which form, render effective peristalsis and segmentation incomplete and even stagnation would seem to be present at times. The acquired adhesions about the colon mean that that organ must carry an extra burden and, unless the musculature is proportionately increased, impairment of proper function is the result. Therefore we are confronted with improper bowel activity throughout its entire length. The result is an overworked stomach, fermentation within the large and small bowel (particularly in the lower end of the ileum and all of the colon). Abnormal gases and other products are produced and these not being properly passed on, are absorbed and auto-intoxication results. Thus we are dealing with a vicious cycle of endless chain. Systematic disease, as tubercles, does produce loss of weight, resulting in the adhesive stage and auto-intoxication or improper living may so effect the intestinal tract as to allow the formation of adhesions and kinks. The reverse would also be true. Any intestinal stasis would allow tubercles to become prolific if transplanted to this region.

Adhesions give us two forces to consider, traction and countertraction. Wherever we find force exerted in one direction causing kinks, we must, of necessity, have some resistance in the opposite directions, so that we may have this continual pulling and dragging accompanied by resistance. The immediate result is improper muscular activity of the alimentary tract or stating it in a different way, an atypical functional activity lessened to a marked degree. Because of this interference normal health is impaired and we find extraneous influences creeping in, the tubercle finds good food and a nook for development, the lymphatic system becomes overtaxed resulting in hyperplasia. These are as a rule end results and not causes. Conceding this to be true, why is the intestinal or short circuit or colectomy not a practical surgical problem for the cure of intra-abdominal tubercles? I feel sure that the conditions outlined above are to a greater or less degree abated or ameliorated by this procedure. I also feel that more of this sort of surgery will be done in the future. I desire to report three of the nine cases in which I have per-

formed this operation, (solely for intra-abdominal tubercles) with most pleasing results in four of the cases.

Case I. Miss M., age 13. Student in public schools.

F. H. Grandparents both maternal and paternal died of tuberculosis.

P. H. She had never been well and strong and could not play and run like others of her age. She has not menstruated as yet.

P. I. For the past two years she has had intermittent diarrhea, and a marked cough but night sweats were not noticed. She has lost about ten pounds in weight the past six months. Diarrhea and cramps in bowels were more marked

September 17th, 1913, an operation at Notre Dame Hospital was performed when the appendix was removed and Lane's short circuit operation done. Tubercles were found studding the ileum and colon and the glands about the root of the cecum were palpable, hard and in groups.

The patient made an uninterrupted recovery, remaining at the hospital four weeks. Since her operation she has gained ten pounds in weight and her colon has markedly improved. Her cough disappeared and she walks five or six miles daily. She has returned to school and resumed her studies with much vigor.

Case II. Mrs. B., age 26. House wife.

F. H. Maternal grandmother, great grand-

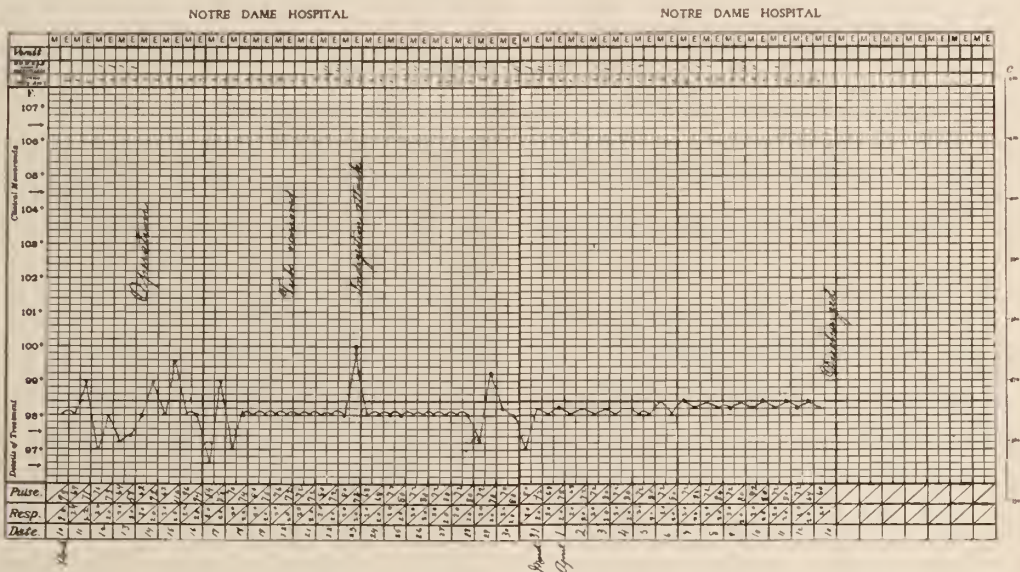


Chart illustrating characteristic tubercular temperature previous to operation. At operation intra-abdominal tubercles were found plentiful. Note change in temperature after four day limit had passed. This chart was selected as a typical one following short circuit for intra-abdominal tubercles.

for the past three months. Her habits were good with no tea or coffee but her appetite was poor. She slept fairly well but dreamed a great deal.

Physical Examination:—F. W. D. P. N. Heart and lungs were negative; abdomen flat and flaccid; tenderness and muscular rigidity over lower right quadrant; stomach and colon not markedly dilated; no glands or ascites; reflexes negative; urine negative; blood, Hgb. 70%. W. B. C. 8,000. R. B. C. 3,000,000.

Diagnosis:—Tubercles within abdominal cavity.

I advised operation and consent was given. On

mother, and several aunts and uncles died of tuberculosis.

P. H. Unimportant, she has never been pregnant and always menstruated regularly.

P. I. For past year she had intermittent diarrhea and has lost considerable weight although she cannot state figures. Her strength seemed to be leaving her and her appetite poor. She slept fairly well, micturition normal with no cough or night sweats.

Physical Examination:—P. D. & N.; mucous membranes pale; sallow complexion with dark arcs beneath lower lids.

Heart and lungs, negative; *abdomen* flat and flaccid, with tenderness and muscular rigidity over entire surface; *stomach* and entire colon dilated; no glands or ascites; generative organs, negative; *urine* negative; reflexes negative; *blood* Hgb. 75%. W. B. C. 7,200. R. B. C. 3,800,000. Temperature over period of one week, A. M. average, 97.8 degrees; P. M. average, 100 degrees.

Diagnosis:—Tubercles within abdominal cavity.

Oct. 1st, 1913, the patient entered the Notre Dame Hospital and two days later I performed Lane's short circuit operation finding tubercles and glands and removing the appendix at the same time. She made a rapid recovery and remained in the hospital four weeks. Since the operation she has gained fourteen pounds. Her general appearance as to color, complexion and muscular tone has improved almost beyond belief. She now walks five or six miles daily and enjoys perfect normal functions. The bowels are regular and there is no suggestion of looseness while the temperature both morning and afternoon is normal.

Case III. Miss T., aged 19; single; shoe operator.

F. H. Unimportant.

P. H. Unimportant; she menstruated at thirteen years and has always been regular.

P. I. For the past nine months she has felt soreness in the left lower quadrant of abdomen; this soreness would be more marked in morning. She raised some thick yellowish material at times. Occasionally she had diarrhea for a few days; this would disappear and remain quiescent for a week or two at a time. Her appetite was poor and she did not sleep well. Micturition was normal. She was accustomed to drink both tea and coffee.

Physical Examination:—F. W. D. & P. N.; *mucous membranes* pale; she has a staring gaze; *heart* negative; *lungs*, harsh breathing at left apex, no rales; *abdomen*, rounded and fairly firm and resistant; tenderness and muscular rigidity over lower, right quadrant; *stomach* and transverse colon dilated; no glands or ascites; reflexes, negative; *urine* negative; *blood*, Hgb. 80%. W. B. C. 4,000. R. B. C. 3,000,000; differential count, normal; temperature, 98 degrees; *hands and feet*, cold; cold areas over shoulder, posterior surface of upper arms and chest.

Diagnosis:—Auto-intoxication. Tubercles (?) I advised operation and on October 30th, 1913,

she was operated upon by me at the Notre Dame Hospital. The appendix was removed and Lane's short circuit operation done. A few glands were felt about the root of the cecum but these were not extremely hard. She made a good recovery and is now walking two or three miles daily. Her weight is slowly increasing and her general appearance noticeably altered for the better. The previously cold skin areas, and hands and feet are now warm. The cough has disappeared and the roughened area in the lungs has nearly cleared up.

TECHNIQUE.

The modus operandi from the time the patients enter the hospital until discharge is as follows: The patients enter the hospital two days previous to time set for operation. Immediately they are put to bed and the bowels cleaned out by divisional doses of the mild chloride of mercury followed by an ounce of castor oil in orange juice. It is always customary in these cases to make a complete blood analysis and urinalysis upon entering and we adhere to this rule very closely. They are given liquid diet and large draughts of water up to midnight the night previous to the operation while the water is continued up to within one hour of the operation. The morning following entry a high suds enema, two quarts in amount, is given. This is again repeated in the evening when another ounce of castor oil in orange juice is given. The following morning another high suds enema, of the same amount as previously, is given. A half hour before the operation they are given a hyperdermic of morphia gr. $\frac{1}{4}$ and scopolamine gr. 1/100. The field of operation is prepared as for any laparotomy. We prefer to merely suds the skin well, shave well down over the pubes, rinse off with sterile water and then resuds. This last suds is rinsed off with sterile water, followed by 1-2000 bichloride solution and again sterile water. The skin is then rubbed dry with a sterile towel and a dry, sterile gauze dressing applied.

In the operating room, after the patient is anesthetized, the axillary sup apparatus is put into play. This is a most important part of the procedure for by this method the patient is allowed to drink saline by the loose tissue of the axillae during the entire operation. Anywhere from 70 to 140 ounces of the saline is used on average

cases so that shock and post etheral vomiting are eliminated.

The abdominal dressing is then removed and a very wide field painted with tincture of iodine. A median incision of extra length is made, extending from the umbilicus to the crest of the pubes. This long incision is necessary for good work as there is much to be done and clear observation is needed for its accomplishment. Before the peritoneum is incised the skin edges, muscle and fascia are protected by moist gauze held in place by Bacheuse clips so that any opportunity of unnecessary contact of the intestines with the skin is avoided. The peritoneum is then incised and the ileocecal angle, sought and lifted out of the opening. The appendix is removed by the usual slab suture method. The acquired adhesions about the lower end of the ileum and root of the cecum are teased free and these parts brought well out for the operation is always flat failure unless this is done as acquired adhesions must be separated for success. The mesentery anchoring the lower two or three inches of the ileum is then perforated by blunt forceps and tied off both approximal and distal to the gut. In doing this it is always sought to avoid including any large vessels. Following the formation of this opening the contents of the ileum, in this section, are milked away and the part clamped near the valve and again at a point one-half inch distant. All subsoil and adjacent structures are then covered with moist gauze and the ileum separated from the cecum by actual cautery. The stumps are then carefully wiped off with small gauze sweeps and further cauterized to the point of complete desiccation. They are then carefully bathed with 70% alcohol. The moist gauze wall is next removed and the ileac stump wrapped in a fresh moist gauze and rolled up away from the angle. The short distal ileac stump is then treated with a purse-string line suture and invaginated into the cecum. This is superimposed by a second purse-string linen suture for exactness. The cecum is then dropped back into its original bed after a bath with 70% alcohol.

Next the rectum is sought at a point about three inches below the last kink. This is brought out of the wound, the contents milked away for some distance in each direction, and this area is then clamped in such a manner that the free band forms the summit running parallel with the forceps. This is essential as will be seen later, the

rectum is opened through this band. The free end of the ileum is then uncovered and swung around in such a manner that it will point toward the rectum without forming a kink or producing the slightest degree of a twist. All subsoil and adjacent structures are protected by warm moist gauze and an end to side anastomosis is done. As previously stated, the opening into the rectum is made through the free band. The linen sutures are used in completing this anastomosis; the first suture includes the sero-muscular coats, the second, the serous coat only, while the third takes in all of the coats on both sides. An intermittently lapped suture seems to serve best for protection against stricture at this point. After the suturing is completed all walling is removed and the area bathed with 70% alcohol.

While the anastomotic area is yet held in view a specially constructed rectal tube 18 inches in length is inserted into the rectum through the anus by an assistant. The free end of this tube is connected with a valved rubber bulb and liquid paraffine is gently pumped into the bowel as the tube is pushed along. Generally 8 to 12 ounces of the paraffine is used. As the end of the tube reaches the anastomosis it is guided through the new opening and allowed to enter the ileum for about six inches. At this time 4 to 6 ounces more of paraffine is injected and the intestines allowed to drop into its new bed with the tube in situ. Next the external surface of the wall of the colon at a point just above the last kink is sutured to the left pelvic wall by a single linen suture. This produces an exaggerated kink, thus preventing regurgitation beyond this point. This last move is of vital importance if we are to be successful. The abdominal wound is then closed in the usual way.

A hot gauze and cotton boric acid compress is then placed over the entire abdomen superimposed by oiled silk and the usual binder applied. The rectal tube is clamped at the visible end and also sutured to the lower angle of the vaginal vulva to prevent slipping. In males it is sutured to the perineum.

Post-operatively the immediate treatment covers a seven day period. The head of the bed is elevated one and a half feet as in modified Fowler's position. The clamp is removed from the tube and allowed to drain on gauze pads. The hot boric acid fomentations are changed every four hours for seven days. Water by mouth, hot or cold, is begun after six hours and increased

in amount very rapidly, as seldom any vomiting follows.

The following morning liquid paraffine is begun, being given by mouth one ounce three times a day. For seven days nothing but water and paraffine are given. Seldom are any hyperdermics given as pain is absent and the circulation good. On the sixth day the tube is withdrawn and the following day the fomentations omitted, a dry dressing applied to the abdomen and feeding begun in the usual manner. The head of the bed is also lowered at this time. Seldom does the temperature go beyond the 100 mark and oftener it is at 99 or below.

INFANTILE PARALYSIS.

BY

C. K. JOHNSON, M. D.,

Instructor in Pediatrics, University of Vermont.

It is but a short time since infantile paralysis has been definitely placed in the list of acute infectious diseases, our increased knowledge as to its pathology having shown it to be a more general infection than it was previously considered.

HISTORICAL.

In 1840 Heine in Germany published a paper on paralysis of the lower extremities.

In 1843 Colmer wrote an article on this disease.

In 1870 Charcot described the disease as due to a degeneration of the anterior horn cells.

In 1884 Strumpell called attention to the resemblance between some cases of spastic paraplegia, acute encephalitis in children and infantile paralysis, suggesting at this time an external agent as a causative factor.

In 1890 Medin after an exhaustive study of a Swedish epidemic wrote a very scholarly account of this disease.

In 1894 Caverly reported an epidemic at Rutland, Vermont.

After this time many epidemics were reported including Norway, Sweden, Austria, Germany, Prussia, Holland, and many of the United States.

Cuba reported an epidemic in 1907, the first from the tropics.

Recently, Pierson has reported an epidemic in Alaska.

ETIOLOGY.

Experimental production of the disease in monkeys was first accomplished in 1909 by Landsteiner and Popper, and a short time later by Flexner and Lewis, and by Straus.

At about this time, within a period of two weeks, Flexner and Lewis in New York, Landsteiner and Levaditi in Paris, Leiner and von Wiesner in Vienna, all reported the transmission of poliomyelitis from monkey to monkey.

It has been fully demonstrated by Flexner and Nagouchi that the causative factor is a minute micro-organism measuring from 0.15 to 0.3 of a micron in diameter. These are found in pairs, chains and masses. These organisms have been shown to pass through a Berkefeldt filter the filtrate prepared from the nervous tissues of human beings and monkeys infected with the disease showing the specific organism. This organism withstands glycerination for a long time and is not injured by a 0.5% solution of carbolic acid.

EPIDEMIOLOGY.

Wickman was the first to call attention to it as a contagious disease. It has been quite generally observed to follow lines of human travel and contact.

Many observers have called attention to the frequent coincidental occurrence of poliomyelitis and paralysis in animals but this may to a large extent be due to more attention being paid to paralysis in animals during epidemics of the disease.

Flexner, Clark and others have shown the nasopharyngeal mucosa to harbor the virus, and as Flexner states it seems quite probable that the nasopharynx serves not only as a path of entrance for the virus but also as an exit. Emulsions made from the tonsils have been shown by inoculation to contain the virus.

Osgood and Lewis have shown the presence of the virus in nasal mucosa of monkeys five months after the acute attack of the disease. Josephson, by allowing a child sick with poliomyelitis to use a handkerchief during a whole week, and, then injecting a monkey with an ex-

tract from the handkerchief, produced the same symptoms in the monkey as had been present in the child.

This shows the possibility of the disease being transmitted by clothing and the like.

The virus has been demonstrated to exist in the circulating blood. It has also been shown that the virus survives the gastric and intestinal secretions after being swallowed with saliva; thus in part it leaves the body with the intestinal discharges.

PATHOLOGY.

Infection takes place much more readily through the lymphatics and nervous channels than the circulation.

At autopsy the meninges are found injected, the brain and cord have a moist translucent appearance on section, there is some increase of the cerebrospinal fluid.

There is a hyperemia and a collection of small mononuclear cells in the perivascular lymph spaces of the blood vessels of the leptomeninges as the earliest change in the nervous system; this is especially marked along the anterior fissure of the cord, less so along its lateral and posterior aspect but as the infiltration increases it extends along these vessels as they enter the cord thus by pressure obstructing the circulation.

The cervical and lumbar enlargements of the cord because of their greater blood supply suffer most. The nerve tissues degenerate because of pressure and by the anemia produced by it.

The brain, medulla and pons show the same lesions but to a lesser extent. The spleen, liver and kidneys are enlarged. The lymphoid tissue throughout the body shows infiltration with mononuclear cells.

Thus as Flexner says a disease affecting the parenchymatous organs, the lymphoid tissue and the nervous system must be considered as a general infection.

SYMPTOMATOLOGY.

The classification that has been most generally accepted is that of Wickman.

Peabody, Draper and Doches basing their classification on the clinical symptoms suggest the following classes, 1st, the abortive cases, 2nd, the cerebral group (upper motor neuron with spasticity), 3rd, bulbo-spinal group (lower

motor neuron with flaccidity). As they state there may be cases not strictly of the 2nd or 3rd groups.

PRODROMAL SYMPTOMS.

In the most typical cases the period of incubation is followed by a period of prodromal symptoms, then an acute stage with paralysis, this followed by a stage of retrogression.

The incubation period is of variable length three and thirty-three days being the extremes, with an average of eight or nine days.

The symptoms vary with the different types, as the upper or lower motor neuron is affected.

There seems to be no definite relation between the severity of the prodromal symptoms and the extent of the paralysis.

In some epidemics as in Hesse-Nassau reported by Muller, symptoms referable to the respiratory tract predominated.

In others as that in Westphalia reported by Krause gastro-intestinal symptoms were quite in evidence.

Among the most constant symptoms are fever, sweating, drowsiness, hyperesthesia, pain on passive motion, and irritability.

Stiffness of the neck with resistance to flexion is quite common as an early symptom. Muscular weakness as a forerunner of the paralysis is often noted.

These early symptoms show little of definite diagnostic value. In my own cases, five in number, two had paralysis of one leg (anterior tibial group) come on during the night, the child being well upon retiring. One had retraction of the head, strabismus, hyperesthesia, fever, headache and irritability four days previous to onset of paralysis.

Two had, fever, indefinite muscular soreness, some stiffness of neck and irritability for seven days before the paralysis developed.

Paralysis in an infant is not infrequently overlooked.

The abortive cases are undoubtedly quite frequent. Wickman states that these cases composed from 25 to 56 per cent. in his large group.

Netter and Levaditti have demonstrated that the serum of the abortive cases neutralize the virus in vitro. In one case of a man paralyzed thirty years before, his blood serum still protected a monkey from the virus.

There is comparatively little in the literature of a definite nature regarding the blood in poliomyelitis. It seems evident, however that there is quite constantly a marked leucocytosis, in some cases reported as high as 30,000, the polymorphonuclears usually showing an increase of 10 to 15 per cent. above normal, with a diminution in the lymphocytes of about the same percentage.

Our present knowledge of the cerebrospinal fluid is incomplete and perhaps confusing.

In general fluids taken during the early part of the disease before paralysis occurs show an increased cell count with a low or normal globulin.

Similar changes occur in the abortive cases.

The report of Peabody, Draper and Doches states that in a case with a fluid containing a high polymorphonuclear count, the failure to find any organisms, would be suggestive of poliomyelitis.

TREATMENT.

In not a few cases, however, there is an increase of lymphocytes.

That strict quarantine is essential is evident by the knowledge that the virus is found in the nasopharyngeal secretions, the intestinal discharges and in the clothing.

All suspicious cases should be isolated.

The attendants should use every precaution to protect themselves.

The diet, bathing, elimination, etc. should be the same as in other infectious diseases.

Irrigation of the nasopharynx and the use of hexamethylamine internally may be beneficial.

Rest in bed is essential during the acute stage, and care should be taken in moving the patient as many have hyperesthesia, besides this, the motion may aggravate the condition. All flexing the head or limbs or bending the spine forward should be avoided.

In some a light padded splint to steady the limb is useful.

All affected parts should be kept warm.

Bromides are useful and in occasional cases codein may be necessary to quiet the restlessness and pain.

At all times every possible precaution should be observed to prevent deformity as the support of limbs mentioned and avoiding pressure from bed clothing.

Contractures are apt to develop early and if

they do occur do not delay too long before calling in the orthopedic surgeon.

After the acute symptoms have passed gentle massage is of benefit, in keeping up the nutrition of the affected muscles. Galvanism or faradism may be used for the same effect.

Later muscle training is useful.

CHOLESTERINIZED ANTIGENS.

In view of the conflicting statements in regard to cholesterinized antigens, C. C. W. Juld, Baltimore (*Journal A. M. A.*, July 25, 1914), has investigated the subject in a series of over 400 reactions. He gives his method. He adopts five clinical diagnoses in reference to syphilis, as follows: (1) positive, (2) probable, (3) for diagnosis (this division (in six reactions) was admitted in considering those cases in which there was a diversity of results with the antigens used), (4) doubtful and (5) negative. The comparison of the reactions was confined to the analysis of the same serum or spinal fluid tested in duplicate with two antigens: 1, the acetone insoluble beef heart of Noguchi, and 2, the cholesterinized alcoholic beef heart prepared after the method of Sachs. The results are given in tabulated form and summarized as follows: "1. In a series of 379 serums and 21 spinal fluids, 269, or 71 per cent., of serums and 14, or 66.66 per cent., of spinal fluids, gave identical results with standard cholesterinized antigens or Noguchi antigen. 2. In 110, or 29.05 per cent., of serums, and 7, or 33.33 per cent., of spinal fluids, there was to a greater or less extent a lack of agreement between these two antigens. Of the 110 serums showing differences in complement fixation, 105, or 95.4 per cent., showed greater complement fixation with standard cholesterinized antigens than with Noguchi antigen while 5, or 4.6 per cent., showed greater inhibition of hemolysis with Noguchi antigen than with standard cholesterinized antigen. No spinal fluid exhibited the latter phenomenon." From this he concludes that standard cholesterinized antigen detects many cases of luetic infection where the Noguchi antigen fails and is less liable to give a negative reaction because of specific treatment. It has splendid keeping qualities, is always available and easy of preparation, and is an ideal antigen.

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H. C. TINKHAM, M. D., }*Editors.*
B. H. STONE, M. D., }

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EDITORIAL.

THE MEDICAL SCHOOL AND THE STATE.

An article appears in the *Journal of the American Medical Association* for August 22nd, 1914, under the above title by H. S. Pritchett, President, Carnegie Foundation for Advancement of Teaching. From the fact that this Foundation has recently completed an investigation of the educational system in this State, the views of Dr. Pritchett become of peculiar interest, and we present some quotations from the article.

(1) "The Public Health of the inhabitants of a state is without doubt the largest single interest with which a state needs to concern itself."

(2) "That the medical school and hospital ought to form the very heart of those agencies by which the state undertakes to deal with the public health."

(3) "That there must be worked out a form of administration which shall co-ordinate all its

agencies, the board of health, the medical school, the hospital, the laboratory, for an efficient handling of the problem of the public health."

(4) "The medical school, the hospital, and the laboratory are the natural agencies through which any administrative board of health must carry out its measures."

(5) "Thus a state board or commission with its executive officers will doubtless continue to be the organization through which the state authority will be exerted. The medical school with its hospital and laboratory will continue to be under the control of the university."

(6) "What is needed therefore, is the closest relation between the state board of health and the university school of medicine."

(7) "However important and far reaching are the powers of the State Board of Health, the medical school will always remain the heart of the public health activities, for the reason that in the medical school, practitioner and student meet."

(8) "It is because I regard the medical school, and when I speak of the medical school, I mean to include faculty and students, laboratories and hospital, it is because I regard the medical school and its proper development, its co-operation with the board of health, as the greatest step in the public health service, that I venture to spend the remaining few minutes of my talk in a consideration of certain conditions which from the point of view of the educator, make for the right growth of the medical school and therefore of the state service."

If we accept as premises the above statements of Dr. Pritchett, what must our conclusions be? Clearly, that each state should control a medical school, hospital, and board of health, and control of course means responsibility, financial and otherwise, for these agencies. But the author of the above quotations, this champion of the state's duty toward the public health, this exponent of the high value of the state school of

medicine, is the president of the Carnegie Foundation, which has advised withdrawal of state aid from the Vermont colleges, except for the teaching of agriculture and the abandonment of the College of Medicine of the University of Vermont. How can we explain this seeming inconsistency? Can he expect this state to do its duty toward the public health if deprived of "the heart of the public health activities"? Or does he look for "the closest correlation" between the Vermont State Board of Health, and a medical college and hospital situated in Boston, New York, or Ann Arbor? This seems impossible. How then can we avoid the conclusion, that in the opinion of the President of the Carnegie Foundation, the State of Vermont is unable, or unworthy to assume what he terms "the largest single interest with which a state needs to concern itself"? Further, does it not seem that, lacking in this chief duty, the people of Vermont must be unable to manage properly other interests, but should seek the protection of some great state, and no longer be allowed to exist as a separate and independent commonwealth?

E. H. B.

NEWS ITEMS.

Dr. Charles Swift, University of Vermont, 1913, has finished a term as interne at the Mary Fletcher Hospital and has opened an office in Rutland, Vermont, for the practice of his profession.

Dr. A. J. Greenwood has removed to Springfield, Vermont, from Poultney.

Dr. A. I. Miller of Brattleboro, Vermont, has resumed practice after a six weeks' absence due to an operation for appendicitis. The doctor was on a visit to Cambridge, Mass., when he was suddenly seized with pain and in four hours was operated on at a hospital.

Dr. L. C. P. Massicotte, who has been at Keene for several years died suddenly at Montreal recently.

Dr. E. J. La Libertie, Tufts 1914, has gone to Keene, N. H., to practice.

Dr. John H. Woodruff of Barre, Vt., has resigned as city health officer and secretary of the local board of health, after serving two years in that capacity. The reason given by Doctor Woodruff for his resignation is the increasing demands of his private practice. He has asked to be relieved of his official duties on September 1st.

Dr. C. K. Johnson, of Burlington, who has been ill with typhoid fever is convalescing.

There have been twenty-six cases of poliomyelitis in Barton, Vermont, with three deaths.

The annual meeting of the Addison County Medical Society was held in the parlors at the Addison House August 28th. The meeting was called to order by the president, Dr. S. S. Eddy of Middlebury, and the report of the secretary, Dr. E. H. Martin, was read and approved. Dr. James M. Hamilton of Rutland, Secretary of the Vermont Medical Society, gave an interesting address on "Medical Organization" followed by Dr. E. M. Pond, the well known surgeon of Rutland, who read a paper on "Internal Secretions." The following officers were elected; President, Dr. S. S. Eddy of Middlebury; Vice-president, Dr. F. C. Phelps of Vergennes; Librarian, Dr. M. H. Eddy of Middlebury; delegates to the State Medical Society, Dr. Carroll of Vergennes and Dr. Howard of Shoreham; Secretary and Treasurer, Dr. E. H. Martin of Middlebury.

The Florida Medical Association has started a journal owned and published by the Association known as the *Journal of the Florida Medical Association*. No. 2 of Vol. I is at hand.

Dr. C. H. Bonney of Ludlow, Vermont, has given up the practice of medicine and it is said he intends to enter the employ of a speciality house doing work on the road.

The following is the tentative program for the 101st Annual Meeting of the Vermont State Medical Society to be held in Rutland, October 8th and 9th.

Oct. 8th—10:30 a. m.

Call to order by the President.

Prayer by Rev. E. P. Stevans.

Address of Welcome by the Mayor of Rutland.

Reading of Record.

Reports of Officers and Committees.

Introduction of Delegates from other Societies.

Papers by C. F. Ball, Rutland; C. K. Johnson, Burlington; D. C. Hawley, Burlington.

At 12 noon the members and guests are invited to visit the Vermont Sanatorium at Pittsford. Automobiles will be furnished and luncheon served at the Sanatorium.

2:30 p. m. Vice-President's Address.

Paper by Dr. W. B. Cannon of Boston.

Paper by Dr. Ellis Bonime of New York.

5 p. m. Meeting of House of Delegates and at the same hour a demonstration of certain laboratory works at the office of Dr. C. F. Ball in the Gryphon Building.

7:30 p. m. Address to the Society to which the public is invited by Dr. Woods Hutchinson of New York.

8:30 p. m. Annual Banquet at the Berwick, Dr. C. A. Cramton of St. Johnsbury, Toast Master.

October 9th.

8:30 a. m. Surgical Clinic at the Rutland Hospital—Operator to be announced.

8:30 a. m. Skin Clinic at the Rutland Hospital by Dr. C. M. Williams of New York City.

10:30 a. m. at the Hall.

President's Address.

Paper by Dr. F. N. Aldrich of Derby.

Paper by Dr. A. E. Houle of Bennington.

Address by Prof. J. G. Odami of Montreal.

2 p. m. Paper by Dr. E. H. Martin of Middlebury.

Paper by Dr. C. H. Beecher of Burlington. Address under the Trust Fund by Past

Assistant Surgeon, E. H. Mullan of the P. H. Service.

Adjournment.

Especial attention is being given to the entertainment of the ladies and it is hoped that they will all attend this meeting.

The Local Committee of Arrangements wish to announce that all automobiles of members and guests will be stabled without expense to owners.

The Secretary is anxious to have all dues paid to the local treasurer as early as possible so that 1914 Registration cards may be in the hands of all members.

All members are requested to bring their cards.

Address all requests for hotel reservations to Dr. S. W. Hammond, Chairman of Committee of Arrangements.

The Court of Civil Appeals of Texas held in Missouri, Kansas and Texas Railway against Hacker that where photograph tracings indicating the weakness of the pulse of the plaintiff in a personal injury action and also tracings showing the impairment of his vision were proved to have been taken with scientific accuracy such evidence was properly received. The tracing of the heartbeats was offered in support of evidence that the pulsations increased from 103,000, normal, to 132,000 a day, which was abnormal. The tracing was made by attaching an instrument to the wrist of the patient. Fastened to the instrument is a needle and slip of paper. As the instrument, a species of clockwork, moves over the paper the pulse wave is produced by the lowering and elevating of the needle by the pulsebeat.

In discussing this modern mode of giving scientific proof of the accuracy of testimony the court said:

"New as this process is, experiments made by scientific men, as shown by this record, have demonstrated its power to reveal to the natural eye the entire structure of the human body, and that its various parts can be photographed as its exterior surface has been and now is. And no sound reason was assigned at the bar why a civil court should not avail itself of this invention, when it was apparent that it would serve to throw light on the matter in controversy. Maps and diagrams of the locus in quo drawn by hand are often used to aid a judge or a jury to an intelligent conception of the matters to be determined, and no one would think of question-

ing the competency of the testimony of a witness who stated that he knew the map or diagram to be entirely accurate, and who then used it to illustrate or make plain his statement. The pictorial representation of the condition of the broken leg of the plaintiff gave to the jury a much more intelligent idea of that particular injury than they would have obtained from any verbal description of it by a surgeon, even if he had used for the purpose the simplest terms of his art."

OBITUARY.

Caleb Wakefield Clark, M. D., University of Vermont, Burlington, 1889, a member of the Massachusetts Medical Society, died recently at his home in Melrose, Massachusetts, aged 60.

Kenneth Laughlin McCleay born May 6th, 1871, died August 17th, 1914. He attended McGill two years, and graduated from Dartmouth Medical. He practiced in Newport sixteen years.

CURRENT MEDICAL LITERATURE.

RESPIRATION IN ACIDOSIS.

Yandell Henderson, New Haven, Conn. (*Journal A. M. A.*, July 25, 1914), calls attention to the ability of the patient to hold his breath as an index to the degree of acidosis. The point of view now coming to be accepted, he says, regarding the relation of acidosis to the pulmonary ventilation and the alveolar carbon dioxide is based to a considerable extent on data accumulated by the Pike's Peak expedition of 1912. "During our stay at the summit," he says, "and after our descent we had occasion to note that the length of time the breath could be held was shorter as the alveolar carbon dioxide was lower—that is, according to the intensity of the acidosis which causes the increased respiration of great altitudes. At that time the bearing on acidosis was not so clear. We now recognize that one and the same underlying condition of the blood determines the resting alveolar carbon dioxide, the degree of dyspnea on slight exertion and the duration of voluntary apnea. Recent develop-

ments indicate that there may be distinct forms of acidosis and it is quite possible that the effects on the alveolar air and apnea of the different forms of this little understood condition may show specific variations, but, if so, this would be of diagnostic advantage rather than otherwise. A few observations made for Henderson by some of his colleagues have shown that inability to hold the breath at all is an accompaniment of some forms of acidosis. A full investigation of the subject has been undertaken by Miss M. P. Fitzgerald. The test used consists in directing the patient to sit quiet for at least five minutes; then to draw a full but not abnormally deep respiration, and to hold it with the mouth closed and the nostrils compressed with the fingers while the observer notes the time. The practical utility of this test, he says, appears so considerable that it seemed advisable to publish it even at this incomplete stage of the investigation.

Epitomes of some of the papers presented at the 36th Annual Congress of the American Laryngological Association.

ADDRESS OF THE PRESIDENT—THE AIR WE BREATHE.

By Thomas Hubbard, M. D., Toledo.

During the period 1825 to 1875 the standard of temperature of dwellings and public places was gradually increased from 55 degrees F. to 72 degrees F. There was no attempt at corresponding increase of humidity. Fifty-five degrees with natural ventilation implies about 40 degrees relative humidity; 72 degrees F. gives a natural humidity of 20 percent or lower. From the health point of view 20 percent decrease in humidity is more important than the 15 degrees rise of temperature.

Catarrhal and acute infections are more prevalent during the cold months to a degree not creditable. Abnormal dryness of the air of our habitation is a factor worthy the attention of hygienists. Dry air is a dust laden air—and an infection disseminator. Moist air causes precipitation of dust content, and a proper humidity lessens dangers of air borne infections.

The caloric shock of sudden change from 70 degrees and 20 percent relative humidity to out-

door air 30 degrees, 80 percent relative humidity (average winter condition), causes chronic congestion and inflammatory reaction in air passages. Chronic pathologic changes in mucosa and turbinates follow. Unhealthful atmosphere of our habitations is the ever present etiologic factor in winter catarrh.

The difficulty of humidification lies in the high temperature standard. Almost impossible to moisten air up to 50 percent relative humidity and at the same time ventilate. Problem simplified at 65 degrees with 40 percent relative humidity. Sixty-five degrees F. with 40 percent relative humidity feels as comfortable as 72 degrees F. with minus 20 percent relative humidity. Sixty-five degrees F. is the "critical point" in heating air. Fuel cost increases very rapidly above that. There is a positive natural resistance above 65 degrees. To heat air from 60 degrees F. to 70 degrees F. costs as much in fuel as to heat it from 20 degrees F. to 60 degrees F.

Sixty-five degrees F. is the natural temperature standard for habitations. In so far as we are habituated to a temperature above that, we are that much hypersensitized to temperature, and consequently more subject to caloric shock—and further, health and economy unite in demanding a revision of heat standard downward, in order that a healthful humidity standard, 40 to 50 percent, may be made practical.

Ventilation is important, but there is such a thing as too much ventilation. When air of desiccating, unhealthful quality is introduced in volume sufficient to change the air of a building two to four times an hour (the minimum rate to get proper distribution of heat), it is virtually a dry kiln effect, and the more rapid the change the lower the humidity. For example: Furnace heated school rooms are gradually brought down to considerably below 20 degrees relative humidity (14 percent in one test), and no amount of so-called "fresh air" without artificial addition of moisture can offset the deleterious effect of the abnormal dryness.

The average winter relative humidity of the North Atlantic and Middle States is near 80 percent. This condition makes it all the more important that we give special attention to "conditioning" the air we breathe up to a tonic healthful degree of humidity.

Engineers and architects are prepared to meet any reasonable demand, and it is our duty to aid

in educating toward establishing proper heat and humidity standards.

THE EMPLOYMENT OF SKIAGRAPY IN THE DIAGNOSIS OF ENLARGEMENT OF THYMUS GLAND.

By D. Bryson Delavan, M. D., New York.

Enlargement of the thymus gland, whether associated with the conditions known as "status lymphaticus," or otherwise, can no longer be called a pathologic curiosity. Cases occur with sufficient frequency to have brought the subject prominently forward, and a considerable literature upon it has been developed during the past ten years. Indeed, there are few clinics in which accidents due to this cause have not occurred to patients under operation. Diagnosis by ordinary means is often difficult, and the only intimation of trouble comes late.

Another difficulty lies in the infrequency with which illustrative cases present themselves. The average clinical attendant may never have seen one until he finds himself confronted with the fatal occasion.

Two cases are recorded in which the Roentgen rays were used, aiding materially in the diagnosis of the presence or absence of an enlarged thymus gland.

Routine examination of every case requiring operation would be very expensive and consume much time, and the reader suggested the possibility of reducing the cost and lessening the time consumed.

Since to examine all would be impractical, suspected cases only should have X-ray examination before operation is attempted. Careful instruction should be given and clinical assistants warned as to the dangers of operating on patients with enlarged thymus gland, that they be made competent to diagnose such cases when they present themselves.

LARYNGITIS SUBMUCOSA SUBGLOTTA ACUTA.

By Charles W. Richardson, M. D., Washington, D. C.

The writer gave a brief history of the condition, and why he preferred the name given to other designation of the condition. His atten-

tion was first called to this disturbance during the early days of his extensive intubation practice. The disease is most frequent in child life, though no age is exempt. The condition is apt to be implanted upon a severe laryngitis—a sequelae of the infective diseases—or produced by foreign body or other sources of local irritation.

There may be more or less general inflammation of the larynx, but this is not always markedly present. The characteristic inflammation of the submucosa manifests itself in the subcordal portion of the larynx. The symptoms are manifested by a slight hoarseness, often absent; by stridulous breathing, and by bellowing cough. There is not usual marked evidence of interference with aeration of the blood, as in diphtheric stridor. The development of the embarrassment to respiration is more gradual than in laryngeal diphtheria. Inspection demonstrates two bright red bands located immediately below the vocal bands, nearly or quite meeting in the middle line. This condition was differentiated from laryngeal diphtheria by the author.

The treatment indicated is quiet in bed, depleting by the skin and bowels, local use of ice externally, and silver nitrate in one percent solution if possible and ammonia bromid carbonate and tincture of aconite internally.

Intubation becomes necessary if the respiration is seriously embarrassed. The paper then terminated with the report of four interesting cases which required intubation.

CHRONIC INFLUENZA OF THE NOSE AND THROAT.

By Lorenzo B. Lockard, M. D., Denver.

At various times cases have been recorded in which influenza bacilli, either in pure culture or in symbiosis, have been found during a period of several months, and in some instances for as long as one and two years.

Usually these have been cases of chronic bronchitis, pneumonia or tuberculosis, although a few have concerned individuals with rhinitis and otitis media.

The patient whose history is recorded presents the unique spectacle of an infection of the nose and throat lasting twelve years, during all of which time cultures of the bacillus influenzae have

been obtainable whenever sought for, whether or not subjective symptoms of the disease were present.

In 1902 he had an attack of influenza, which terminated in a peritonsillar abscess; the pus showed bacillus influenzae. During the next two years three swabs from the tonsillar crypts gave similar findings.

In 1909 his tonsils were removed and after three days a false membrane appeared covering the pharynx and pillars. A culture from this showed the bacillus. In the following two months three positive cultures were obtained. An autogenous vaccine had no effect. Three years later, following an attack of typhoid fever, there developed acute inflammation of the maxillary sinus, the pus from which gave a pure culture of the bacillus influenzae. There was a second attack six months later, with the same bacteriologic findings.

A third attack developed the following winter, when a radical operation was performed, and again the influenza bacillus was found. Three months later an abscess appeared over the second bicuspid. This tooth and the first molar were extracted and the necrosed portion of the floor was resected. A pure culture was obtained from the extracted tooth. Five months later the bacilli were still present.

The literature fails to show a similar case, although cases of chronic infection have been described by several authors.

Bacilli are found in the throat secretions of many normal individuals, and in a large percentage of patients suffering from other diseases. In 172 normal individuals the bacillus was found 43 times, and in 427 patients with other diseases it was present in 215.

Following attacks of influenza bacilli may remain latent in the throat, bronchial tubes or nose, and give rise to recurrent attacks in the individual or transmit it to others. In this way may be explained the eruption of sporadic cases in nonepidemic periods.

For the diagnosis of chronic influenza the finding of the influenza bacillus is not essential, as the symptoms are characteristic. No treatment aside from that which depends upon raising the resistance of the individual has been effective.

(Continued on page xiii).

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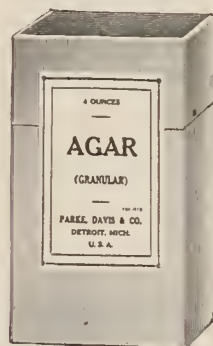
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THERAPEUTIC NOTES.

SOME PLAIN FACTS ABOUT A SOPORIFIC.—For nearly forty years we have been making for the medical profession what we believe to be the ideal sedative, soporific agent, and the fact that its use at the hands of physicians steadily grows seems to be the best proof of its therapeutic value.

Until within late years we put this product on the market under the name of Daniel's Concentrated Tincture of *Passiflora Incarnata*, but pirates began counterfeiting and forced us to protect the reputation our product had earned, and accordingly we gave it the distinctive name, PASADYNE.

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A sample bottle may be obtained by addressing the Laboratory of John B. Daniel, 34 Wall Street, Atlanta, Ga.

MODERN ADMINISTRATION OF COD LIVER OIL.—In olden days whilst the great nutritive value of cod liver oil was fully recognized and every effort made to place it at the patient's disposal, yet the lack of a palatable product all too often made its employment unsatisfactory or even impossible.

For many years this draw-back of cod liver oil deprived the profession of the best of tissue foods and it was not until pharmaceutical science devised means of making the oil palatable that it began to come into its own. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is the most valuable and widely employed of the preparations of cod liver oil, and largely so because the medical pro-

fession has long recognized its superior worth. It may be given over long periods of time without causing gastric distress.

DRUG TREATMENT OF DIABETES.—In the treatment of diabetes mellitus opium, of course, has long held first place among therapeutic agents. In the hands of many physicians Papine (Battle) has produced identical results with those derived from the administration of opium or codeine. The employment of small doses at the beginning, and thereafter increasing until the required effects are produced, or until narcotic symptoms are exhibited, when the dose will be held stationary or reduced, is the practice usually followed.

THE PHYLACOGEN TREATMENT OF HAY FEVER.—While Mixed Infection Phylacogen was formally introduced to the medical profession in 1912, it was some months later before adequate data as to its value in the treatment of hay fever were available. In 1913 hundreds of cases were reported, details of many of them appearing in the medical press during the latter months of that year. The results from these clinical observations were highly significant, showing a surprisingly large percentage of recoveries and warranting the belief that in Mixed Infection Phylacogen the physician had acquired a formidable weapon for his fight with one of the most stubborn diseases that he is called upon to treat.

Mixed Infection Phylacogen is administered hypodermatically. The initial dose should be small, the usual procedure being to begin with a 2 cc. dose subcutaneously or a 1-2 cc. dose intravenously. The reactions occur more quickly, and are ordinarily more severe, following intravenous injection.

"In giving the subcutaneous injection," one writer explains, "I usually select as a site the insertion of the deltoid or the area just below the scapula. The latter seems to be the ideal spot, as absorption takes place very readily and the complaints from the local reaction are much less. I repeat my injection either daily or on alternate

days, the interval to be determined by the clinical condition of the patient. It is seldom necessary to administer more than four to six injections, the symptoms often disappearing after the second or third injection. Almost immediate relief is noted by the patient. The irritating discharges from the eyes and nose are diminished in amount, the sneezing is lessened, the dyspnea is relieved, and the patient usually sleeps comfortably. All patients that I have treated successfully have remained well through the season. I have yet to record a failure, but I have not had a sufficient number of this class of cases as yet to warrant a positive claim that this remedy will act in all forms of this disease."

Mixed Infection Phylacogen is supplied in 10 cc. bulbs. As doubtless well known to most physicians, it is a Parke, Davis & Co. product.

(Continued from page 242).

STUDIES REGARDING ANAPHYLACTIC REACTIONS
OCCURRING IN HORSE ASTHMA AND ALLIED
CONDITIONS.

By J. L. Goodale, M. D., Boston.

Dr. Goodale reviewed briefly the literature relating to anaphylactic reactions following the administration of antitoxic sera, and reported a series of cases of vasomotor disturbances of the upper air passages which were examined in regard to their reactions following the local application of horse serum to the abraded skin and the nasal mucous membrane.

SUMMARY OF CASES.

In five patients with horse asthma, the application of horse serum to an abrasion of the skin produced within a few minutes sharply localized edema and reddening. In three of these cases the introduction of horse serum in the nose caused edema of the nasal mucous membrane, together with profuse watery discharge and sneezing.

One case of horse fever without asthma gave a delayed reaction to the nasal test, but was negative for the skin test. A similar case gave



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a delayed but definite reaction to the skin test, but showed no nasal symptoms. Four of the horse fever cases without asthma were negative for both tests. In two cases, the sister who had horse asthma reacted markedly to both tests, while the brother, whose vasomotor symptoms from horses affected the nose alone, showed no reaction.

Six cases of bronchial asthma and five cases of hay fever were negative for both tests.

Three cases without vasomotor symptoms which had received immunizing doses of antitoxin several months previously showed no reaction to the tests.

The results of these experiments indicate that a localized anaphylactic reaction from horse serum may be occasioned in certain individuals who experience asthmatic disturbances from the neighborhood of horses. The severity of these vasomotor symptoms appears to be a determining factor in the production of the reaction, since persons with nasal symptoms alone do not appear to be sufficiently sensitized to horses to give a positive skin test.

The suggestion was made that a preliminary skin test with horse serum be made in all patients who have previously received an injection of antitoxin derived from horses, whether tetanus, diphtheria, or plague serum. Furthermore, in all patients who are about to receive antitoxin for the first time, inquiry should be made as to whether they have ever been disturbed by asthmatic symptoms when in the neighborhood of horses, and if so they should first be tested.

So far as these experiments go, they would indicate that in horse asthma a dangerous anaphylactic shock may occur after the hypodermic administration of horse serum. In horse fever with nasal symptoms alone, this danger is less or not at all to be feared, and in other types of asthma and of vasomotor rhinitis it is not present.

to be published by the Department of Agriculture. In these tests, the specialists of the department found that there were substances which, if applied to animals, would keep the biting flies, such as the stable fly and horse fly, the bot fly and the screw worm fly, away from the animal for from one to four days. They also tested a number of substances to be used on wounds to prevent the screw worm fly from depositing its eggs, and the housefly from interfering with the wound and possibly infecting it.

Various kinds of flies tend to injure cattle by weakening them and reducing their milk supply. It is fairly well established that the stable fly does considerable damage, especially in northern Texas, where it was found that they killed stock directly, made cattle more subject to the recurrence of Texas fever, and reduced milk supply, causing a loss estimated at over \$25,000 in a single year. The test experiments with dairy cows seem to indicate that the effect of flies on milk is not of great economic importance, although evidence seems to show that animals protected from flies feed better and are generally in better condition. Reduction in milk, some authorities believe, is due as much to the fact that cows do not graze as freely in the hot sun in summer as at other seasons.

In general, the conclusions are that many of the substances such as pyrethrum powder, camphor, citronella, and sassafras, while temporary repellents, lose their effectiveness very shortly. 10 percent solutions of the liquids in cotton seed oil, therefore, commonly have to be applied daily.

Various oils, emulsions of oils, and mixtures of oils are used in repelling flies. Crude petroleum, cottonseed oil, fish or train oil, and light coal-tar oil may be used pure.

Jensen (1909) recommends the following formula which is said to protect cows for a week:

- Common laundry soap 1 pound.
- Water 4 gallons.
- Crude petroleum 1 gallon.
- Powdered naphthalin 4 ounces.

Cut the soap into thin shavings and dissolve in water by the aid of heat; dissolve the naphthalin in the crude oil, mix the two solutions, put them into an old dasher churn, and mix thoroughly for 15 minutes. The mixture should be applied once or twice a week with a brush. It must be stirred well before being used.

REPELLENTS FOR PROTECTING ANIMALS FROM THE ATTACKS OF FLIES.

Washington, D. C. The results of tests with various substances designed to keep flies from annoying cattle, horses and mules, are shortly

Fish oil is rated as one of the best repellents and has been used alone and in combination with various other substances. Other substances that have repellent qualities and that have been used in various mixtures are pine tar, oil of tar, crude carbolic acid, oil of pennyroyal and kerosene. The protective action of fish oil is stated to range from less than two days (Parrott, 1900) to six days. Moore's formula is said to protect for two days. This mixture is safe when applied lightly with a brush, but not when applied liberally with a pail spray pump. The formula is as follows:

- Fish oil.....100 parts.
- Oil of tar50 parts.
- Crude carbolic acid1 part.

Laurel oil is a very effective repellent. Mayer (1911) found that the protection lasted from 2 to 12 days. The oil when used pure has an irritating effect unless it is applied lightly. According to Mayer the irritating effect may be overcome by combining it with linseed oil in the proportion of 1 to 10. In the experiments of the Department of Agriculture, it was found that 10 percent of laurel oil in cottonseed oil was active for less than a day.



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A number of formulas for repellents for application to wounds have been recommended by various authors.

In experimental tests carried out by the department the following results were obtained:

A 10 percent mixture of crude carbolic acid (21.8 percent phenols) in cottonseed oil has a very strong repellent action on flies, but this lasts less than a day, in consequence of which it is necessary to apply the mixture every day. The mixture should be applied lightly with a brush, since a heavy application with a spray pump is likely to cause phenol poisoning.

Mixtures consisting of 10, 20, and 50 percent of pine tar in cottonseed oil have marked repellent qualities. They should be applied lightly and it is necessary to apply them daily. A liberal application of a 10 percent mixture is deleterious to animals. This is also the case with a half-and-half mixture of pine tar and Beaumont oil when applied lightly with a brush.

A mixture of oil of tar (14 percent phenols, volatile with steam) in cottonseed oil and in Beaumont oil has a very marked repellent action. A 10 percent mixture of oil of tar in cottonseed oil is safe. A half-and-half mixture of oil of

tar and cottonseed oil when applied liberally with a spray pump and 50 percent oil of tar in Beaumont oil applied with a brush are not safe. Ten percent oil of tar in Beaumont oil is safe. When applied lightly it is necessary to apply 10 percent oil of tar in cottonseed oil or 10 percent oil of tar in Beaumont oil every day.

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Inasmuch as the fundamental aim of athletics is, or at any rate ought to be health, it is not unreasonable to ask in what degree each type of game or sport approaches this ideal of contributing to a sound body and the enjoyment of its physical resources. It will probably be found difficult to compare the health-giving virtues of tennis and cricket, of skating and basket-ball, of rowing and tug-of-war. The factors of enjoyment, of the special participation of definite organs of the body, of opportunity, season, environment, etc., are too complicated to permit a very critical analysis. But Dr. Bartsch of Heidelberg has wisely suggested that it may become feasible to correlate the dangers attending the various athletic sports and to furnish a sort of "scale"—*Gefahrenskala*, as he naively terms it—whereby one could determine the relative likelihood of damage or injury to be encountered in the prominent athletic pastimes. This is not unlike the condition in industrial occupations, for many of which the incidence of accident and harm is known. If the statistics of accidents in athletics,

and the personal harm known to result all too often, could be gathered in some way for purposes of public contrast, the physician and physical culture teacher could advise more intelligently regarding the desirability of participation. We believe, however, says *The Journal of the American Medical Association*, that the greatest advantage of this suggestion would lie in the reforms which the facts thus elicited would inevitably promote. A few well-attested data regarding the undoubted dangers of crew races, of football, and some other much-vaunted sports might serve to direct public attention to the abuses of athletics. The promoters are then usually quick to respond.

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THE MEDICAL DISCOVERY OF OLIVER WENDELL HOLMES.

The Harvard *Alumni Bulletin* contains a letter from a graduate suggesting that in the contemplated memorial to Dr. Oliver Wendell Holmes some worthy recognition be made of his incomparable service to mankind in the discovery and propagation against obstacles that would have deterred a less honest and sympathetic mind of the contagiousness of childbed fever and its remedy. Lay persons and unfortunately many in the profession are unaware of this epoch-making discovery by a man whose memory is beloved and honored for his literary attainments only. A disease which consigned thousands of recent mothers to untimely graves was suddenly deprived of its malign prevalence by the discovery of Dr. Holmes that it was contracted by contact with the doctor or nurse and that simple precautions by them would prevent its occurrence. Persecuted in his own country by the ridicule of great professors in that specialty, Holmes pursued the even tenor of his way until his idea was accepted in England. Thence it was carried to the Continent, where it was taken up by a Hungarian physician, who reduced the mortality in the Vienna hospitals enormously. To the latter his countrymen have erected a monument in Budapest, and annually homage is paid to his memory, while Holmes is barely remembered in the United States for this scientific discovery which, it is said, he valued more highly than his literary fame.

It is a significant fact that while achievements of military heroes and statesmen are blazoned upon bronze and marble the victories over disease and death achieved by the physician rarely receive public recognition. Only through the contributions of his own colleagues there stands in this city one statue dedicated to a physician, that of Dr. Marion Sims in Bryant Park. The discovery of anesthesia is not commemorated in New York in bronze or marble, and the achievement of the modest man who discovered the pathology of appendicitis and pointed out the only safe treatment will probably never be generally known. How many laymen have heard of Reginald Fitz? And yet there are few families in this country or the world that do not owe the life of one or more members to this patient plodder, this modest student of pathology, while the surgeons who daily perform the operation devised by him are reaping fame and fortune.

A statue of Reginald Fitz should be erected. The world will be benefited by the spirit of emulation aroused by such monuments and it will be bettered by the sympathetic recognition of true worth.

Look out for arsenic in cases where precancerous conditions are suspected.

In syphilitic arthritis don't hesitate to push the iodides; but it is well first to use a moderate dose of salvarsan.



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THE HAT-PIN MENACE.

Everyone knows that a hat-pin point protruding several inches beyond the brim of a woman's hat is a source of danger to anyone in close proximity to the wearer of the pin. Probably no one sees the more serious consequences so frequently as the eye specialist. Sometimes the injury consists of a mere scratch, which heals readily and leaves no permanent defect. On the other hand, every now and then the scratch becomes infected and serious impairment of sight, if not actual loss of the eye results. One who has seen these bad results is forever alarmed for himself and others when he sees a protruding hat-pin point in a crowded car or theater lobby or wherever people are closely crowded together. It ought not to be necessary to pass laws to prevent such accidents, but as the number of such cases does not decrease it would seem to be desirable to make the wearing of shorter hat-pins obligatory. There are devices on the market for covering and protecting the end of a hat-pin which are effective and inexpensive. Any jeweler can shorten a long hat-pin in a few minutes and at a cost of a few cents, and thereby, perhaps, save a fellow being's eye.

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Vermont Medical Monthly.

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OCTOBER 15, 1914.

NUMBER 10.

ORIGINAL ARTICLES.

MALIGNANT DISEASE.

BY

A. L. MINER, M. D.,
Bellows Falls, Vt.

PRESIDENT'S ANNUAL ADDRESS.

Gentlemen, it would be presumptuous on my part to offer you a paper on this subject from any other standpoint than that of a general practitioner. As you know, I am not a cancer specialist, nor am I a research worker along this line, nor does anybody recognize my inability to properly treat this stupendous subject more than I. My attention has been drawn to the modern awakening in this subject, and having taken a delight in looking it up, I thought a resumé or digest of some of the immense amount of literature might be of interest to some present, and answer for an apology, at least, for the obligation incumbent upon this office.

Cancer, as popularly understood, includes malignant new growths or tumors, regardless of their cellular formation, whether from epithelium (carcinoma) or from connective tissue (sarcoma). Cancer, at present, is considered to be, at least, by many investigators, an infective cellular disease. It is more or less chronic in its course, usually non-encapsulated, infiltrating, prone to dissemination, apt to recur after removal, associated with a distinctive, terminal cachexia, and is imperative in its tendency to a fatal termination. It may develop in any organ of the body containing epithelium or connective tissue, and at any age—sarcoma in early life and carcinoma from middle age to old age usually.

ETIOLOGY.

Some of the predisposing causes of cancer are injuries, long continued slight irritation, predisposing to carcinoma, and a single, more severe

trauma predisposing to sarcoma, age, sex, situation, environment, mode of life, food, heredity, race, civilization, and free use of alcohol.

Whatever the histological differences between carcinoma and sarcoma, modern cancer research workers, and especially Ehrlich¹, has shown that the causative factor in the course of transplantation of the mouse carcinoma may be transferred to the connective tissue elements of a stroma and thus produce sarcomatous characteristics, thereby transforming the carcinoma into a mixed tumor and, by still further transplantations, some of the mixed tumors have eventually developed into pure sarcoma. Also Ehrlich² finds that the mouse which, through inoculation, has become immune to carcinoma is also immune to sarcoma, and vice versa, thus indicating a reaction against some common agent. Thus it is shown that the same causative factor, under favorable conditions, may cause either sarcoma or carcinoma.

The definite, exact cause of malignancy, if at all is not as yet generally known, regardless of the fact that cancer has been recognized since the earliest dawn of medicine, Hippocrates and Galen having described the disease. Notwithstanding the fruitlessness of the past, we have good reason to believe that the knowledge of the specific cause of cancer is near at hand. The whole civilized world is aroused as never before. It has become painfully evident, not alone to the medical profession, but to the laity as well, that something must be done to stay the onslaught of this ever increasing foe.

The small army of scientists and research workers, such as Ehrlich, Bashford, Lewin, Graylord, Lous, Murphy and many others, have come to the forefront, and are using every known means in science to solve the riddle. Since it has become generally recognized that malignant disease is not confined to man alone, but affects many of the lower order of animals and vegetable life as well, the research workers and scientists along this line have renewed and increased their efforts.

Research laboratories have been created in which animal experimentation is conducted and

this work is being fostered by private, philanthropic, and public funds, and as a result of the many thousands of experiments both with animal and human cancer, very much valuable information regarding the cause and different phases of this disease is being discovered.

The etiology of cancer is a subject which has been of absorbing interest for many years. The theories which have been advanced as to the cause of cancer are legion; most of them have been discarded by more mature investigation. One of which, that of Conheim, or the embryonic theory, was at one time quite generally accepted. Conheim³ believed that the clusters or tracts of embryonic cells, the so-called "rests" and "vestigial," which may be found in various parts of the body, and which are not needed for its normal development, but which retain the power of growth, are the origin of malignant tumors without any apparent provocation. Much research was done along these lines, but Bland-Sutton⁴ says that this theory is now discarded.

Modern pathological and bacteriological research workers are divided into two groups. One⁵ believes carcinoma and sarcoma are due to some micro-organism, and the other⁶ believes they are due to some altered cellular or cystogenic condition, not due to any germ. Payton, Lous, J. B. Murphy and W. H. Tyler⁷ have proven without question that avian sarcoma can be produced by a cell free filtrate, thus proving that it is not necessary to transplant cancer cells in order to reproduce cancer. Therefore, would it not seem that the real cause of cancer is something other than the cancer cell itself, some chemical poison or toxic substance of Nowell,⁸ virus, spore, protozoa, microbe, or possibly an ultra-microscopic germ which, if inoculated under proper conditions, into a susceptible host, is capable of reproducing a cancer tumor of the same kind as that from which the filtrate was taken? This to my mind, disproves the biologic or cytologic theory of cancer.

"Plimmer's bodies," or the so-called "bird's-eye inclusions" first discovered in cancer cells by Virchow⁹ in 1847, and since by Thoma, Steinhilber, Borrel, Puffer, Plimmer, Gaylord, Calkins, and many others, are peculiar intracellular bodies, which were believed to be the cause of cancer, but Farmer, Moore and Walker have found these archoplasmic vesicles, as they are called, in normal tissues of the body, especially during

spermatogenesis, and so to that extent has this theory been weakened.

A strong argument in favor of the germ theory is that of Gaylord.¹⁰ He says, "No chemical agent, however, with which we are acquainted, toxin or otherwise, and which is capable of bringing about a reaction in living protoplasm, causes this protoplasm to produce the same agent. On the contrary the protoplasm produces, in all cases thus far known, an agent which is antagonistic to the first—in other words, some form of antibody. For this reason it is impossible to conceive of any chemical agent endowed with the power to fulfil the condition of the x-factor. We are, therefore, compelled to assume that the x-factor must be in some agent which can reproduce itself, and thus far the only agents with which we are acquainted which can accomplish this are living agents. Hence the most rational explanation of the unknown factor in cancer is that it is some living agent. If we so wish we can speak of this agent as a virus, as does Borrel, inasmuch as we do not know the specific nature. Borrel believes that there is an infectious factor in cancer as yet undemonstrated, and that it is in all probability an invisible or ultra-microscopic organism. The same contention has been made in the case of syphilis, because the causative agent was unknown . . . ; and it is likewise held to be true in small-pox, in vaccinia, and in other diseases," including infantile paralysis until recently.

There are many other reasons to strengthen the germ or infective theory. It has been found that previously healthy mice and rats have developed carcinoma after occupying cages formerly occupied by carcinomatous mice and rats. Again it has been found that in some laboratories quite a per cent. of carcinomatous cases retrograde and finally recover and that these recovered cases resist further transplantations or inoculations, showing that they resemble certain infectious diseases in possessing an antibody. Also the immune cancer-serum from these recovered cases, injected into normal mice, prevents them in a very large measure from developing cancer following the inoculation of cancer cells.

Roswell Park¹¹ says that "cancer bears an analogy to known zymotic diseases, and the only reasonable explanation is that it is of parasitic origin"; and Dr. Summers is of the opinion that the germ or poison of cancer is carried through

the medium of a host in the same way that yellow fever is carried, and he believes in "cancer districts."

Jansen, Bashford, Ehrlich, Gaylord and many others have transplanted carcinoma for very many generations and Lous and Murphy have done the same with chicken sarcoma, and each succeeding generation became more virulent than the former. These transplantation experiments have proven that it is almost impossible to transplant from one specie to another specie. With chicken sarcoma, Lous found it necessary to have the same blooded chickens for his experiments to be successful. It is with the utmost difficulty that human cancer is transplanted into the lower order of animals and have the tumors develop properly, although as far back as 1851, Joseph Leidy¹² repeats the results of his experiments on the inoculability of cancer before the Academy of Natural Science of Philadelphia in which he inoculated frogs with human cancer material and succeeded in having the cancer cells live for a limited period.

These interesting facts regarding the inoculability of cancer more readily among blood relations may explain the reason why surgeons do not become inoculated more readily while operating upon cancer, for without doubt many have received cuts and needle wounds while operating for this condition. Not only have research workers found that cancer may be transplanted and also can be caused by injecting a filtrate which has passed a Berkefeld filter thus being freed from cancer cells (and thus disproving the theory of Dr. Keating-Hart and Bashford, who oppose the parasite theory) but that these inoculations are much more liable to take if accompanied with considerable trauma. This fact may explain the clinical observations that cancer is more liable to develop at the sight of long continued irritation, such for instance as lung cancer from long continued irritation of smoke, chimney sweeps cancer from irritating soot, stomach cancer from peptic ulcers, uterine cancer from cervical laceration, lip cancer from irritating pipe stem, cheek cancer from irritating teeth, and so the list may be extended. Heredity has seemed to play some slight part in the etiology of cancer in that the disease seems to crop out in successive generations of the same family, but could this not be reasonably explained by the infection or germ theory, when we take

into account the fact brought out by Payton, Lous and others that inoculations are much more readily successful if blood relations are used for the host? Therefore, it would seem to me at the present time that the specific cause of cancer might be considered to be a filterable, cell free, mildly infectious agent, requiring a host of the same kin or family, and some degree of trauma or irritation to insure a characteristic growth or development of the disease.

PATHOLOGY.

Tumors are variously grouped by different authors, but the classification of Bland-Sutton¹³ appeals to me as being about as reasonable as any I have seen. He divides tumors into six groups and places sarcoma in group I, along with many other varieties of connective tissue tumors, and carcinoma is placed in Group III with epithelial tumors. Sarcoma and carcinoma are usually non-encapsulated and are composed of tumor cells, sarcoma arising from the connective tissue elements of the body, and may be composed of large round cells, small round cells, or spindle-shaped cells, also of melano or black cells with a fine stroma investing each cell. They are more vascular than carcinoma and dissemination occurs by way of the blood vessels involving usually the lungs or liver. The rapidly growing tumors are usually softer and more vascular than the slowly growing ones. These tumors affect connective tissues in all parts or organs of the body, muscles, skin, mucous membrane, bone, cartilage, etc. Their appearance varies according to the organ affected. The lower limbs are more liable than the upper. If a gland becomes sarcomatous, it usually starts from its investing fibrous capsule, and subsequently the disease invades the gland itself.

Carcinoma, like sarcoma, originates in the cell, but unlike sarcoma, its chosen cell is of the epithelial instead of a connective tissue variety. Carcinoma, or cancer proper, may originate in the protective epithelium as the skin and mucous membranes, as an epithelioma or rodent ulcer, or in the secretive epithelium, as for instance in the mammary gland. Carcinomas are not well supplied with blood vessels but have an abundance of lymphatics and dissemination occurs through the lymphatic system. Usually cancer cells multiply rapidly and fill the gland

with groups of cells which are loosely held together by very fine fibrous stroma. The tumors are non-encapsulated and infiltrate the surrounding tissues in such manner that it becomes, at times, almost impossible for expert pathologic histologists to detect the healthy from the diseased tissues. The lymphatic glands in the neighborhood and around the diseased area are the most likely to become secondarily affected.

Probably the causative factor of the malignant disease causes the normal cells of the body exposed to the influence of this agent to be transformed into cancer cells. Gaylord¹⁴ quotes from Orth as follows: "I am, I confess, of the opinion that there are cancers in which the transformation of preformed epithelial cells into cancer cells takes place continuously in the tissue bordering on the margin of primary tumors." Because the carcinomas are poorly supplied with blood, they are liable to degenerate and even slough, sometimes they retrograde and then are known as "withering cancer," with this variety the fatal termination is sometimes delayed for fifteen or twenty years.

SYMPTOMS.

Here it is that all of us, whether general practitioner or specialist (for the general practitioner is no longer necessarily the first to examine the cancer case, as many of them go directly to the specialist for their first examination) need ever to be watchful for the very earliest signs of malignancy, for, as treated at present, surgically or otherwise, about the only hope for the unfortunate patient is to begin treatment while the disease is or seems to be purely local; therefore a review of the so-called precancerous conditions will be of great value.

Of these, leukoplakia or lingual ichthyosis, is one of the best known and often precedes cancer of the tongue, also a similar condition of the labia majora is a forerunner of cancer in those parts. A wart on the scrotum of a chimney sweep, in a tar or paraffin worker, or a broken down wart or mole on any part of the body, chronic ulcers, regardless of site or cause, cracks of the lips, corner of mouth, anus or nipples, excoriations about an old cervical laceration, sanguinolent vaginal discharge after the menopause

is thoroughly established, inverted nipples, eczema of nipples as early seen in Peget's disease, are all liable to be forerunners, or perhaps more properly speaking, early symptoms of malignancy, and should be immediately attended to before the more grave symptoms develop.

The appalling gravity of the situation is very ably set forth in the following words of John Bland-Sutton¹⁵: "The disease is one of very great importance on account of its insidious onset, and, in its earliest stages, its painlessness; the ignorance which prevails regarding its cause; its progressive and irresistible destructiveness; the manner in which it infects lymph glands; the extraordinary effect it produces in different organs on account of the dissemination of the growth in the form of secondary nodules; the hopelessness, misery, and pain it produces when fully developed; and the inability of medical and surgical art to deal effectively with it save in its very earliest stages."

A history of metrorrhagia, whether accompanied with pain or not, cystitis, constipation, coming on in people who have otherwise been normal, black, tarry stools, frequently small hematemesis, so-called gastric ulcer symptoms, stomach pain following eating, associated or not with vomiting. (Dr. Musser¹⁶ of Philadelphia states that pain was the first or second complaint in 60 per cent. of his cases of gastric ulcer). Enlargement of the supra clavicular lymphatic glands especially on the left side of neck, a gradual loss of vigor and especially if accompanied by anemia, any of these conditions should excite the suspicion of the careful doctor and be the cause of a most careful and thorough search with the aid of speculum, cystoscope, endoscope, stomach tube, microscope, X-ray, or any other appliance, if needed, for the underlying cause, which in too many instances will be cancer. Later symptoms are too vivid to all of us to need mentioning even in a paper of this nature.

When the malignant tumors have infiltrated the adjacent organs and have developed metastasis and the cancerous cachexia, when the symptoms make the diagnosis easy, then it is that the patient's chance of cure are nearly or quite all gone. Nurses, and especially district nurses and midwives should urge their patients many of whom they see for the first time, to consult a physician early in all suspicious cases.

DIAGNOSIS.

At the best, diagnosis in the earliest stages of malignancy is not easy. If the disease be on the surface, diagnosis is, of course, more readily made than when deep seated. Roentgenograms are of great value in diagnosing bone, stomach and bowel cancers. Competent microscopists are of incalculable value and should be utilized whenever it is possible to secure a suitable section for their examination, but John B. Murphy in his 1914 "Clinics," repeatedly suggests that the clinical symptoms be followed if they are at variance to the bacteriologist. Infiltrating sores must, although suspicious, be differentiated from syphilitic or tuberculous ulcers. The fact of a tumor arising from connective tissue or epithelium which is not encapsulated is strongly suspicious. A murmur or hum heard over a vascular tumor is diagnostic of sarcoma. A thorough knowledge of the symptoms, appearance and natural history of the large variety of benign tumors in their inception will be of the greatest value in helping to differentiate from the malignant growths while there is yet hope. For, if we wait for our diagnosis until the advanced signs of malignancy; "rapidity¹³ of growth, recurrence after removal, invasion of the lymphic glands, diffusion by secondary deposits, the resulting constitutional cachexia,"—we have waited for the inevitable, the general fatality.

Again, I want to emphasize the importance of an early diagnosis, because the per cent. of recoveries from modern treatment, small as it unfortunately but surely is, would be even smaller if treatment had not, in these cases, been instituted early, and the public are rightfully, I believe, being educated to expect astuteness in diagnosis from their physician. It was only recently in *The Ladies' Home Journal* that Samuel Hopkins Adams presented his article, "What Can We Do About Cancer?" in which he advised the good women of our land to ever be on the alert for first symptoms and also "If your doctor is doubtful get another doctor." So, not only from our burning desire to relieve suffering humanity, which every true physician possesses in ample measure, but from a business standpoint as well, should we ever welcome the diagnostic aids to early diagnosis of malignancy.

Kelling¹⁷ claims for his serodiagnosis or

hemolysis test which he has tried out in nearly 1500 persons including 400 with cancer that he has never gotten a positive reaction in the healthy. Rosenberg¹⁸ found positive complement fixation in serodiagnosis more frequent with serum from cancer patients than others but similar findings are observed in so many other conditions that he regards the test as having little practical differential value. The serodiagnosis as made by Abderhalden and which is receiving the attention of many investigators all over the world does not yet seem to be sufficiently perfected so as to yield uniform results by all investigators and the twelfth annual report of "The Imperial Cancer Research Fund" sounds a warning against too much reliance upon this test. Our own Dr. Ball¹⁹ has contributed some very valuable literature on this subject. He certainly is putting the right kind of work into it, and we are, indeed, fortunate to have been able to have heard from him first hand, at yesterday's session of this meeting. It is through the efforts of such men as Abderhalden, Ball, Epstein, Frank, Heimann, Guggenheimer, Frankel, Halfern, Lowy²⁰, Levin²¹, Leitch, and many others that the truth regarding the value of this test will become known, and we welcome their efforts. Pelosi²² and Gluznski²³ believe achlorhydria with abnormally high digestive ferment content should early suggest possible malignant disease. The value of Solomon and Saxe's²⁴ sulphuric urine test has been established by Petersen²⁵ and Mazzitelli²⁶, whereas the reaction is not universally reliable, it is usually so, and is a valuable aid in diagnosing alimentary cancer. The Brieger antitrypsin test in the hands of Roux and Savignac²⁷ has also been a valuable aid to diagnosis. Citroblatt also reports 90% positive findings in 99 cancer patients with this test. Lenk and Pollak²⁸ have improved the tryptophan test so as to be of diagnostic use. We may not be able to avail ourselves of all the diagnostic tests, but, in our doubtful cases, we should use every effort ourselves or send our case to a competent specialist who can make a reasonably early diagnosis.

PROGNOSIS.

The conclusions in a paper on "Spontaneous Cure of Cancer²⁹" by Gaylord and Clowes are worth quoting under this heading and are as

follows: 1. "Spontaneous cure of mice successfully inoculated with the Jensen tumor occurs, in our experience, in about 23 per cent. of the animals. 2. The chances of spontaneous cure are inversely proportioned to the size of the tumor. The frequency of the occurrence and its distribution in animals suggests that it may be more frequent in human beings than is generally supposed. 3. The occurrence of spontaneous recoveries from cancer, indicating the existence of immune forces capable of terminating the disease, demonstrates that cancer is not necessarily incurable, and should serve as an additional stimulus to research directed toward the development of a serum-therapeutic treatment."

These research workers have collected a list of fourteen authentic, histologically confirmed human cancer cases which have spontaneously retrograded until they were ultimately cured and many others which were not confirmed by the microscope. These facts are very encouraging. Are we not justified in believing that if more was known of the pathogeneses of this disease, more spontaneous cures would be known to occur? At any rate research work along these lines is certainly to be encouraged. The mortality of this disease, if treatment is delayed until the symptoms are unmistakable, and this undoubtedly has been the prevailing custom, is appalling. I have searched the records of my town, going back sixteen and one-half years, for the mortality in malignant disease and have compared the results with that of pneumonia and tuberculosis, two of the diseases known to have a large mortality, and am somewhat surprised to find that during the first fifteen of these years cancer had a mortality of 66% as large as that of either pneumonia or tuberculosis. There were 74 deaths from cancer and 112 each from pneumonia and tuberculosis, or in other words, an average of one death per year per thousand population from cancer in my town during those years. During the last year and a half there has been 10 deaths from cancer, 12 from pneumonia and 8 from tuberculosis. This shows a frightful increase of this disease with us. Using this data for an estimate of the cancer mortality throughout the United States each year and we are appalled to find that about 90,000 of our people die annually from cancer. Syms speaks of the mortality as being 80,000 annually.

The per cent. of recoveries in my town during the same period is distressingly small. From a careful inquiry of the local physicians I learn that fourteen cases have passed the three year limit without recurrence.

The prognosis of uterine cancer treated by modern surgical methods, the Wertheim method was the one largely used, is well illustrated by the reports by eminent specialists at the Baltimore meeting of the "American Gynecological³⁰ Society" recently. Dr. Peterson of Ann Arbor, out of 218 cases only 51 were suitable for the radical abdominal operation, of these cases 59% were cured, or 13% of the whole number of cases under observation. Dr. Cullen of Baltimore had 24% of recoveries out of 50 operations. He does not state how many cases presented themselves who were beyond operation. Dr. Sampson of Albany, operated on 8 cases out of 25 patients with recoveries in 50% of his operative cases, or 16% of the whole number. Bovee of Washington had 22% of cures in his 36 operation cases. He also does not state the number of cases which were beyond operation. Dr. Graves of Boston had 55% of recoveries from 18 operative cases. Dr. Chalfont of Pittsburg, selected 13 cases for operation from 30 cases admitted and had 39% of operative cases recover and 16% of the whole number. Dr. Noble of Atlanta, rescued 36% from his 38 operative cases.

At the Massachusetts General Hospital³¹ in the eleven years from 1900 to 1910 inclusive 306 uterine cancer cases were admitted. Of these only 106 were suitable for the radical operation. Of these they were able to trace 16 as cured beyond the five year limit, or 15% of the radical operative cases and 5.2% of the whole number admitted. In the above reports, I have given the operators no credit for the cases which were lost sight of and probably they should rightfully have some credit from these.

We in America are not getting as good end results in our uterine cancer cases as are the surgeons of Germany and Austria. Taussing³² of St. Louis, says that this "Is not due to greater operation mortality or to narrowing the limits of operability. It is not due to lack of boldness or skill on the part of the surgeons, but to the character of the material that comes to him for operation. The women are negligent of early symptoms, and the average practitioner is care-

less of diagnosis or inclined to try palliative measures until the disease is too far advanced. The percentage of operability is less than one half that of the average German clinic. Only by improving the medical training of the men who go into general practice, by the extermination of quacks, and most of all, by the persistent systematic education of the laity can we ever hope for better results."

For end results in operative treatment of cancer of the breast, I refer you to the most excellent articles of John B. Deaver appearing in the "Journal of A. M. A." in March 15th, 1913 issue. He states that Greenough's studies of the possibility of cure in cancer of the breast are as follows:

262	cases with adherent skin	.....16%	successful
71	" skin not involved	.....32%	"
45	" Tumor adherent to chest wall	.....11%	"
194	" moveable on chest wall	.....21%	"
236	" axillary glands palpable	.....12%	"
117	" axillary glands not palpable	.....19%	"
6	" Bilateral involvement	.....none	"
60	" ulceration present	.....6.5%	"
316	" non ulcerative	.....21%	"
16%	medullary cancer was successful,		
23%	Scirrhus " " "		
and			
47.5%	Adenocarcinoma was successful, or	18.9%	

recoveries after the three year limit in 376 operative cases. Halstead in 1907 reported 42% of recoveries from 210 operations. In Deaver's list from the German Hospital 21.3% passed the three year limit without recurrence.

The duration of untreated cancer varies somewhat with the age of the patient and location and virulence of the disease. Rodent ulcers may last for many years before a fatal termination, whereas gastric cancer usually kills in six months to two years. Breast and uterine cancers cause death in about two years. It is evident from the above that prognosis is grave even in the hands of the most competent, and much more so with others.

TREATMENT.

It is not my intention to enumerate all the methods of cancer treatment, but to emphasize the fact that whatever treatment, as used today, should be instituted early if we are to succeed in saving even a small percentage of our cases. If the case is seen in its early stage, authorities

are well nigh unanimous in recommending surgery, with a possible exception of rodent ulcers or superficial epithelioma, and we have seen that we have reason to expect a cure in from 10% to 60% of these cases so treated by competent surgeons.

Bainbridge³³ sums up his conclusions in an able article on "Transmissibility and Curability of Cancer," as follows: "That while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest means of cure. But, gentlemen, when we see the multitude of cases, surgical discards, that are already past all help of radical surgery at their first examination, or have already been run and rerun through the surgical mill until there is not another grist to grind, or who absolutely refuse to surgery, as they occasionally will do, we earnestly crave more light on new surgical and palliative treatment. Radium is just now in the lime light as a curative and palliative agent for cancer, and many very able articles have recently appeared. Those of Simpson,³⁴ Holding,³⁵ Newcomb,³⁶ and Williams³⁷ are especially worthy of mention, notwithstanding the enthusiasm of men like Abbe, Kelly and many other prominent investigators. The *New York Medical Journal* of July 25, 1914, editorially does not give radium precedence over Roentgen ray. Without doubt, however, radium is a valuable addition to cancer therapy.

X-ray has proven with competent workers, such as Pfahler,³⁸ Pusey,³⁹ Lange,⁴⁰ and others to be a powerful retrogressive factor in cancer, and since the advent of the Coolidge tube, its field of usefulness is greatly increased. In inoperable cases and as a post-operation treatment, and in recurrent cases, it is ranked by many surgeons as having no equal.

Deaver⁴¹ states, "As a prophylactic measure against post-operative recurrence, or in cases of local recurrence which on account of position and extent of the growth or the debilitated state of the patient preclude further operative interference, and in operable cases of cancer of the breast, the X-ray is the only therapeutic measure of value." Dr. Skinner⁴² of New Haven, Conn. summarizes his article, "Practical Application of the Roentgen ray to the Management of Malignant Growths" as follows: "1. The X-ray has demonstrated that it is capable of

exercising a powerful curative influence over many cases of malignant disease, hence its routine addition to extirpative measures will increase the number of curable cancer cases." He states that it is impossible beforehand to tell which operative cases are going to need the X-ray, and so advises its use in all post-operative cases. Johnston summarizes his very able article "The place of the Roentgen Ray in Therapeutics" which appear in *Journal of American Medical Association* of August 29, 1914, as follows: "1. The Roentgen ray is of distinct value in the treatment of a number of conditions. 2. It can never supplant, but can and does supplement surgery to a valuable degree. 3. The results to be expected depend on the employment of a correct technic which implies the ability to prescribe correctly and administer the necessary dosage at the necessary time in each individual case. 4. The Coolidge tube has placed in the hands of the profession an instrument capable of great good if carefully and intelligently employed. 5. The value of radium as a therapeutic agent should be no longer disputed. 6. The physician employing these various agents must be thoroughly familiar with the possibilities of present-day surgery as well as expert in his own technic in order that his patients may obtain the benefit of everything that science has to offer. 7. Physicians and the public must never forget that every case of malignancy remains for a certain length of time after its inception a curable disease by proper surgical procedure." As a result of laboratory research work, we have some reason to hope for a potent serotherapy. Blumenthal and Lewin⁴³ have had very encouraging results in their rat experiments by using an autolysate and have had 35% of complete cures, so it would seem that we may have great hopes from the vaccine treatment. Dr. Ill's work with body fluid is certainly interesting. Dr. Levin⁴⁴ states: "The presence of immunity in the tumor animals makes it quite certain that ultimately a specific method of treatment in experimental cancer will be found. But it is impossible to predict whether the methods of chemotherapy, serotherapy or ferment therapy will be the most fruitful of results."

The Staudenmeyer-Zeller⁴⁵ treatment of local applications of arsenic, cinnabar and charcoal is a caustic treatment for external open cancers of

some promise. Dr. Zeller has so far treated 57 cancer patients of whom 44 are reported by him as cured. The desiccation treatment as described by Clark⁴⁶, ionization of Massey⁴⁷ and massive caustics of Strobell, are all capable of effective results in skilled hands.

Czerny⁴⁸ has had 2,500 in-patients and 1,000 out-patients at the Cancer Research Institute at Heidelberg under his charge, and so his opinion, on treatment should certainly be of value. He reiterates anew that the earlier and the more radically incipient cancer is removed the better for the prospects for a permanent cure. But to the inoperable cases he applies a number in turn of the many palliative non-surgical methods individualizing with each case. Werner⁴⁹ who is interested in the same hospital advises the internal use of arsenic as of great value to the patient's general health. He states that radiotherapy is the best tested and most reliable method of treatment to date. He says that: "In 171 cases of inoperable or recurring cancer under treatment during the last half of 1912, 12% of the patients were essentially, and 16% considerably improved." He warns that combined treatments, especially if such cause fever, may do direct harm, but he says: "Forewarned against this, however, until something better is discovered, the best prospects lie in the combination of several methods of treatment, radiotherapy, chemotherapy, and immunotherapy, supplemented by cautious toxin or ferment treatment." Halstead has for years taught the importance of operating in bloc and Wm. J. Mayo⁵⁰ cautions against autogenous grafting during cancer operations. It has been repeatedly found that recurrence often happens where care is not taken to keep the open tissues from soiling by the cancer elements. The cautery method of excising where practicable offers great advantages over the ordinary methods in closing the blood and lymphatic vessels against absorption.

The toxin method includes Coley's erysipelas and bacillus prodigiosus method which has been used with considerable success. The ferment method includes trypsin and amylopsin. Fulguration (Dr. Keating-Holt) method of treatment is by cauterizing the open wound following operation by electric sparks from an alternating high frequency current. Hygienic measures and careful attention to the general health of the patient is imperative.

Cancer is a disease in which preventative medicine should play an important part, and it is along this line, until more is definitely known about its pathogenesis, that we may hope for the best results. To this end the "American Society for the Control of Cancer" has been formed, and the different medical, surgical and research societies are appointing active committees on this subject, and through these channels we are in hopes of enlightening the public as to early or pre-cancer symptoms. I trust the Vermont State Medical Society may not be far behind in this campaign against this dreaded disease.

In conclusion, I wish to reiterate what has appeared in this paper repeatedly, that, with our present knowledge of this disease, our patient's only hope of cure is an early diagnosis and prompt and radical treatment, and do not forget to palliate the hopelessly incurable for much can be done for his relief. I cannot close this paper in a better way than by quoting from Wood⁵¹ who sums up the whole treatment in this manner: "In the present state of our knowledge, any marked reduction in the death rate from cancer can be brought about only by recognizing the potential cancers, the pre-cancerous stages of cancer and curing these conditions before the malignant process has become established."

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EDITORIAL.

By the time this journal comes from the press, the One Hundred and First Annual Meeting of the Vermont State Medical Society will have become history. We feel perfectly safe in predicting a successful meeting. Previous experience in Rutland gives the assurance of a hearty welcome which will make all visitors feel at home. The membership of four hundred is an exceedingly credible recommendation of the medical profession in the State. The Vermont doctor can not afford to miss the esprit de camaraderie which membership in this body brings him and we feel there will be few who can not resist the contagious enthusiasm of our whole-souled secretary. May his shadow never grow less.

The Medical Department of the University of Vermont opens its sessions which is the second since the requirement of one year of academic training of admittance in the medical department with a class of thirty, all of whom have com-

pleted the one year required and five of whom are academic graduates. This entering class in the face of the agitation caused by the Carnegie Foundation report and the rumors of the failure of State aid is the best possible argument with which to answer the statements made by the foundation that classes are sure to grow smaller and smaller. It shows clearly that there is a normal demand for a medical institution in Burlington and that higher advanced standing will not drive students from the entering classes.

We are glad to see indications of some abatement in the popular hysteria over sex hygiene. While there may be no doubt that there is need enough for wise, carefully regulated education along this subject which means so much to every mortal born of woman, yet there was much of morbidity in the way in which the subject has been taken up by women's clubs, church societies, novelists and dramatists. It, with its sister fad, eugenics, must have stimulated in many poorly balanced individuals with latent erotic tendencies, a sex consciousness which in the long run was likely to do more harm than good. That the possible damage of introducing these suggestions to the young through the instruction by immature teachers, is being at last clearly seen, is indicated by an action taken by the American Social Hygiene Association through its committee on resolutions. In this way the Association declares its belief in the constructive value of sex hygiene and directs the attention of the grave dangers, ethical and social, arising out of sex stimulation by undue emphasis on sex problems and relations, and furthermore gives expression to the belief that sex hygiene should be approached in the public schools only with great conservatism and under the direction of persons qualified by a scientific training and teaching experience to present a subject from a safe moral point of view. The Pacific Coast Conference on sex hygiene puts itself on record in the following words: "Conference does not advocate the in-

roduction of sex instruction into public schools as a distinct subject but recommending that normal schools and educational departments of universities train teachers in nature-study (biology), physiology and hygiene so that they can present reproduction and sex (hygiene) in their proper relations to other subjects.

Other resolutions recommended, frequent conferences of educators, parents and social hygiene workers, wider co-operation with federal authorities and other agencies against dishonest advertising medical companies, state aid for the work of social hygiene societies until it can be transferred to the public educational and administrative departments, and requesting The American Social Hygiene Association to hold its 1915 meeting in California."

This association also takes strong action against the dishonest advertising of medical companies and urges a co-operation between educators, parents, social hygiene workers and the federal authorities in the suppressing of this evil.

NEWS ITEMS.

Dr. A. M. Butterfield of North Troy was badly injured in an automobile accident September 22nd. He was in his own car at the time of the accident, the cause of which has not been determined. The doctor was taken to a hospital in Montreal. The injuries so far as determined are internal and a pelvic fracture.

Dr. Robert G. Blood, whose home was in Newport, Vermont, has located in Wells River, Vt. Dr. Blood was a graduate of Dartmouth, 1913.

Dr. Philip Mooney, a graduate of Vermont University, died Sept. 27th, at Gloucester, Massachusetts. He was 55 years of age and had practiced at Gloucester for 27 years.

Dr. A. L. Leonard, who has been at Lyndon for several years, has removed to Lyndonville.

PHILADELPHIA HEALTH DEPARTMENT BEGINS CRUSADE AGAINST RATS.

As a precaution against the introduction of bubonic plague in Philadelphia, the health authorities have started a war of extermination of rats, which is under the personal charge of Director Harte. It is expected that the city will pay a bounty for each dead rat delivered at specified central stations. The object of such bounty is to furnish the health bureau with quantities of the rodents from every quarter of the city for bacteriological examination to determine without any loss of time if the bubonic plague infection has actually got into that port.

WAR ON SICKNESS.

War has been declared on industrial sickness by the American Association for Labor Legislation. Following the successful campaign for accident compensation which now has captured the principal states, a committee of the nation's experts who have been working quietly on plans for a year and a half, declare that sickness insurance must be made compulsory, with emphasis on medical care, in order that it shall lead to a campaign of health conservation. The committee includes Dr. I. M. Rubinow, of New York. The association announces that it is now drafting bills for a vigorous legislative campaign to initiate the movement for sickness insurance in the United States.

PLAGUE IN THE UNITED STATES.

According to reports of the United States Public Health Service from June 24th to August 8th, fourteen cases of plague in man and thirty-two cases in rodents were reported in New Orleans. Since that time one human case has been reported. In Seattle, Wash., plague rats have been found at intervals since September 30, 1913, the last one reported being discovered on August 7, 1914. In California the last case of human plague was reported in Contra Costa county on

May 17, 1914. On July 1, 1914, a plague infected squirrel was found in this county and on July 3rd a plague infected squirrel was found in San Benito county.

THE USE OF GRADUATED NURSING BOTTLES
PROHIBITED.

The superintendent of weights and measures of the State of New York issued through the press some weeks ago a notice to the effect that the law requiring all measures to be accurate, applied to the graduated nursing bottles for infants. An examination of these bottles showed that they were grossly inaccurate and therefore that their sale was illegal. Since that time it has been pointed out to the superintendent that all the nursing bottles on the market are graduated and it is understood that in view of this fact the order will not be enforced for the present, since no bottles are made at this time of the year and it will be impossible to obtain a supply of plain bottles until the factories begin operations in the fall.

The United States Court for the Southern District of Iowa recently declared unconstitutional the Iowa Sterilization Law which requires the operation of vasectomy to be performed on all persons twice convicted of a felony. The decision is based on the ground that the law provides a cruel and unusual punishment.

More than 44,000,000 Red Cross Christmas seals were sold last December, and \$440,000 was netted for antituberculosis work in various parts of the United States. The sale in 1913 is a gain of 4,000,000 seals over 1912, or 10%. It is hoped that this year the 50,000,000 mark will be reached.

Fifteen thousand folders announcing a Health Department contest in the writing of essays on "The Dangers of the House Fly" were distributed in the public schools of Norfolk, Va., May 27th.

The Wellcome Historical Medical Museum is now open at 54a Wigmore Street, London, Eng. Medical visitors to the metropolis are urged to examine its collections.

Pennsylvania's state-wide plan of tuberculosis dispensaries will be duplicated in the world's metropolis, London.

At the meeting of the Association of Life Insurance presidents, held in New York City June 5th, Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, presented figures showing that while the death-rate throughout the country has been lowered, the amount of illness has not been lessened to any appreciable degree. He estimates that the annual losses from preventable illness in the United States is \$1,000,000,000 annually. The next twenty years must see our efforts directed to the control of disease and for this reason he urged the passage of a bill drafted by the state health officers at a conference in 1913 to insure complete reports of diseases. It is urged that the life insurance companies should assist by having this bill put on the statute books of the states by cooperating with committees appointed for the purpose by the American Medical Association and the American Public Health Association.

Illinois' health board now makes the Wassermann and diphtheria tests without cost for doctors' poor patients.

"The tango foot" is the name of a new disease discovered by Dr. Boehme, and reported in the *Klinisch Therapeutische Wochenschrift* of May 31st. He asserts that it is the basis of a large number of cases of professional dancers, both men and women, which have come to his attention in the last few months, and that the strange affections of the muscles of the leg are undoubtedly due to tango dancing. The symptoms show that the malady is distinct from rheumatism and can be due only to a special strain placed upon and stretching the muscles of the foot and toes, incidental to the tango. The patient usually awakes with a dull pain, which seems to be located in the front and lower part of the calf. In the course of the next few days it comes in increasing intensity, and the bending of the foot

becomes more difficult. Stair-climbing, and especially stair-descending, are particularly painful.

The late Harris C. Falmestock, of New York City, left \$500,000 to hospitals and other public charities there.

In July of last year a convalescent home was opened at Sharon, Conn., intended exclusively for patients suffering from heart disease or convalescing from acute attacks. In connection with this institution there is established a trade school for cardiac convalescents. The object of this philanthropic work is to provide an industry whereby these convalescents may earn a living, without incurring grave risk. Each workman is graded in accordance with the amount of work he may safely do, and this is increased as the crippled heart recovers. Rest rooms are provided, and there is constant medical supervision. The industry established at Sharon is the making of concrete flower pots.

The General Education Board, which administers the John D. Rockefeller fund, at New York, May 27th announced appropriations totaling \$1,400,000 to universities and colleges. Among these are the Stevens Institute of Technology, Hoboken, N. J., \$250,000; Elmira College, Elmira, N. Y., \$100,000; Hendrix College, Conway, Ark., \$100,000; Washington and Lee University, Lexington, Va., \$100,000; Wells College, Aurora, N. Y., \$100,000, and Wofford College, Spartanburg, S. C., \$33,000.

Five hundred thousand dollars was appropriated to the medical department of Yale University to enable the university to gain complete educational control of the New Haven Hospital and to install full-time clinical teaching in the main medical and surgical departments.

The twenty-fifth anniversary of the opening of Johns Hopkins Hospital, Baltimore, was celebrated with appropriate exercises the first week in October.

Sir William Osler, regius professor of medicine at Oxford University, has been elected foreign associate of the Paris Academy of Medicine.

A new method of treating tuberculosis of the skin was described by Dr. M. L. Heidingsfeld, of Cincinnati, before the section on dermatology of the American Medical Association at the recent Atlantic City meeting. Pure trichloroacetic acid is applied full strength on the nodules in the skin every seven or eight days for several weeks.

Ten patients in three families at Erlanger, Chattanooga, suffered from a form of dysentery which was found after considerable investigation to be due to the bacillus of Shiga. This infection is unusual in this climate, but is frequent in tropical countries and is fatal in from 7 to 20% of cases. The diagnosis was confirmed by experts.

According to correspondence in the *Philadelphia Ledger*, from Milan, after many experiments on animals, a chemist at Siena named Partini, claims to have discovered a new method of permanently preserving the human body in perfect condition after death. He is now exhibiting the corpse of a man of thirty, which has been lying in the open air for four months after treatment. The body is just as it was at the time of death, even the eyes remaining unaltered.

Four conventions of nurses, 6,000 in number, will hold their triennial sessions at the coming Exposition at San Francisco; the International Association of Nurses, representing fifteen foreign nations, the American Nurses' Association, with 22,000 members; the National League of Nurse Education, numbering 12,000 members, chiefly educators and superintendents of training institutes; the Organization of Public Health Nurses, with an equal number of members, whose labors have to do particularly with public health, tuberculosis, settlement work, social service and the like; and finally the California State Nurses' Association, which will act the part of hostesses to the foreign contingent.

A committee has been appointed to raise \$500,000 for St. Luke's Hospital, Cleveland. The money will be used to liquidate an indebtedness of \$100,000 and to erect additional buildings for the institution, including a new power house and service building.

For a new private pavilion for the Royal Victoria Hospital, Montreal, Canada, a few thousand dollars has been collected. Mr. J. K. L. Ross will bear the balance of the cost, between \$250,000 and \$300,000, as a tribute to the memory of his late father. Drs. Walter W. Chipman and George E. Armstrong, feeling the need for the pavilion, had each contributed \$1,000.

Havana, Cuba, is successfully coping, by modern sanitary methods, with a localized outbreak of the plague. Spanish clerks in a sugar refinery are the victims up to date.

Travel will not be interrupted by the plague in Havana.

(Continued on page xiii).

CURRENT MEDICAL LITERATURE.

NO-SOUND PERCUSSION STROKE.

H. L. Smith, Baltimore (*Journal A. M. A.*, July 25, 1914), says that in the recent editions of the more important books on physical diagnosis the strong percussion stroke is being gradually replaced by lighter percussion as determining more accurately the deep dulness of air-free bodies. He gives a resumé of the discussions of this subject by different authorities and says: "Owing to the inconstant results obtained by my students and myself in percussing out the areas of superficial heart and liver dulness, it seemed clear to me that the fault lay in the varying strength of the stroke, and that uniform results could be obtained only when each individual examiner percussed with a blow of equal force. To attain this end I devised some eight or ten years ago the following method, which I have since employed: To determine the outline of the area of superficial cardiac dulness the patient is placed in the usual dorsal decubitus, and directed to suspend respiration. The examiner's ear is held close to the patient's body. There should be absolute quiet in the room. A point is selected where the heart is known to be uncovered by lung. The pleximeter finger (left middle) is laid gently on this area, the other fingers remaining elevated. The second phalanx is now percussed with the right middle finger. A sound is at first

produced by moderately strong percussion which is quickly graded down, by lessening the force of the blow to a *no-sound* or control stroke. This control stroke, which proves inaudible over that portion of the heart's surface uncovered by lung (area of superficial dulness), produces a faint sound over the area of the deep cardiac dulness, and a more decided one over the lung region just outside it. The no-sound stroke having been obtained, one percusses with a blow of equal force from the area of deep dulness toward the area of superficial dulness. The borders of the latter are instantly recognized by the sudden disappearance of the faint sound obtained over the former. The outstretched pleximeter finger, resting gently in its entire length on the part percussed and parallel to the border to be determined, edges its way quickly in short lateral (pendulum-like) swings toward the objective border, and receives at the end of each swing two short control taps quickly delivered. The other fingers, as stated, are held up from the body surface, allowing the pleximeter finger free action. This maneuver serves as an excellent means for comparing delicate shading in sound, and also in detecting its abrupt disappearance." The same method is used in ascertaining the superficial limits of the liver, and it is also applicable in mapping out the contour of thoracic aneurysm, dull lung areas, abdominal tumors and the like.

INTESTINAL MYIASIS.

In 1907 H. C. Blankmeyer, Springfield, Ill., reported a case of infection with the *anthomyia canicularis*, the eighteenth on record at that time (*Journal A. M. A.*, May 4, 1907, p. 1505). He now reports (*Journal A. M. A.*, July 25, 1914) a second case, one of infection of the intestines by the same parasite. It was characterized by shooting pains in the rectal region and abdominal tenderness, occipital headaches and chronic constipation. The treatment consisted of 1-dram doses of magnesium sulphate before breakfast and at four p. m. with 5-grain doses of salol four times a day under which the patient seems to be improving, passing forty or fifty larvae a day. The parasite is the larva of the small black flower fly known, according to Sitt, as *anthomyia pluvialis*.

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TYPHOID FEVER

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THERAPEUTIC NOTES.

A PHYLLACOGEN FOR TYPHOID FEVER.

An announcement that will undoubtedly occasion widespread interest among physicians is appearing in current medical journals over the signature of Parke, Davis & Co. We refer to the announcement of typhoid phyllacogen. The new product is prepared from pure cultures of the bacillus typhosus of Eberth and mixed infection phyllacogen. As the name signifies, this latest phyllacogen is indicated in the treatment of typhoid fever or any pathological condition due to infection with the bacillus typhosus. Before being formally offered to the medical profession, typhoid phyllacogen was subjected to rigid clinical tests extending over two years. The most significant fact developed by these investigations appears to have been the prompt amelioration of symptoms and rapidity of recovery in successful cases. Indeed, it is evident that, when properly treated, recovery not uncommonly takes place in approximately half the time required under conventional methods.

Parke, Davis & Co. have issued a 32-page brochure on typhoid phyllacogen which deals in extenso with the new method of treatment, discusses diagnosis, dosage, technique of administration, etc., and reproduces a valuable paper by Dr. E. P. Benoit, professor of clinical medicine in the Laval University and physician at Notre Dame Hospital, Montreal, read before the Medical Society of Montreal and later published in *L' Union Medicale due Canada*. Dr. Benoit refers at some length to a number of typhoid cases that were treated at the Notre Dame Hospital, concluding his paper with the significant observation that "the treatment of typhoid fever with phyllacogen gives real results." Physicians are advised to send for a copy of this "typhoid phyllacogen" pamphlet, addressing their requests to Parke, Davis & Co. at their home offices in Detroit, Michigan.

A SYSTEMIC BOOST.

It is safe to say that the average physician is called upon to prescribe a tonic more frequent-

ly than any other form of medication, unless it be a cathartic. Patients who are patients solely because they are tired, "run down" are generally debilitated, are constant visitors at the physician's office. Such individuals need something that will boost them up to their normal point of resistance and then hold them there: in other words, not a mere temporary stimulation, with secondary depression, but a permanent help to the revitalization of the blood and a general reconstruction. Pepto-Mangan (Gude) is not only prompt in action as an encourager of appetite and better spirits, but is also distinctly efficient as a blood builder and systemic constituent. It is pleasant, non-irritant, free from constipating effect and does not stain the teeth. It is thus a general constitutional tonic of positive service in all conditions of general devitalization.

CHRONIC BRONCHIAL AND PULMONARY AFFECTIONS.

There is a considerable number of chronic bronchial and pulmonary disorders in which the administration of iodine in some form would prove serviceable. Thus in chronic bronchitis and pleurisy, in conjunction with the syrup of iodide of iron the iodide of potash will prove of benefit. An excellent means of exhibiting the iodides in such cases is offered by iodia (Battle). This preparation will prove of advantage in other pulmonary or bronchial disorders in which an indication for iodine may exist. A point of superiority in iodia (Battle) is its palatability and the ease with which it is tolerated over long periods.

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Few agents at the physician's command for employment in nervous disorders serve such a satisfying purpose as does Pasadyne (Daniel) in unstable states of the nervous system.

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(Continued from page 256).

Sulfurized pure sheet and sponge rubber is now successfully used for grafts and to prevent adhesions.

The latest new periodical on the science of eugenics is the *Archiv für Frauenkunde und Eugenik*, founded by Dr. Max Hirsch, of Berlin, and issued by the Kabitsch publishing house at Würzburg.

Portland, Ore., now has twenty acres of land, valued at \$100,000, donated as a site for the campus and buildings of the Medical School of the University of Portland, by the Oregon-Washington R. R. & N. Co.

One of the leading orthopedists of Germany, Prof. G. Joachimsthal, of Berlin, died recently, aged 50. He founded in 1900 a private clinic for orthopedic surgery. Since Hoffa's death, in 1908, he has been chief of the university clinic



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for orthopedic surgery, and has written extensively on this specialty.

The seventh international gathering to discuss the medical aspects of electrology and radiology met this year at Lyons, France, July 27-31, with Professor Renaut in the chair. Among the seven addresses was one by Lumière, of color photography fame, on the action of Roentgen rays on the photographic plate; one on clinical electrocardiography by Nicolai, of Berlin, and Vaquez and Bordet, of Paris. Schnee will discuss ionotherapy, and Doumer the action of high-frequency electric currents on surgical tuberculosis, while Falta, of Vienna, and Sommer, of Zurich, will discuss radium.

Medical societies everywhere should take this stand: At its regular meeting, March 14th, the Gallatin County Medical Society adopted resolutions deprecating the attempts of the periodical *Life* to hinder and prevent research by false and overdrawn illustrations, and endorsed the work of *Puck*, which is endeavoring to counteract these attempts.

AMERICAN HOSPITAL IN LONDON.

The American Women's Hospital, fully equipped through the efforts of the American women in London, has been turned over to the war office and is housing a large number of wounded soldiers. Beds for 200 patients have been provided through the efforts of American women, and complete hospital equipment and all supplies required by injured soldiers have been supplied by the committee, headed by Lady Paget. The American flag and the Red Cross flag fly together from the roof of the hospital, and it is open to the wounded soldiers of all nations.

A CONVENIENT METHOD FOR THE ESTIMATION OF ALBUMIN IN URINE.

Frank R. Eldred and C. M. Pence.

Read before the Scientific Section of the American Pharmaceutical Association at the meeting held in Denver, Col., August, 1912 and reprinted from the *Jour. Am. Pharm. Assoc.*, February, 1913.

The determination of albumin in urine by weighing the precipitated albumin or by determining its amount by the Kjeldahl method, requires so much time that it is not adapted to the needs of the clinician. Several methods have been devised for the approximate determination of albumin, depending upon the measurement of the volume of a precipitate after centrifuging or allowing to stand. Upon trying these methods they were found to give results so unreliable as to be of little value.

As titration methods for albumin did not seem practicable, an endeavor was made to obtain the albumin in the form of a precipitate the volume of which would bear a more constant relation to the amount of albumin present. As it had been observed that acetone precipitated albumin in a flocculent form from aqueous solutions, it seemed probable that this precipitate would settle rapidly and compactly owing to the low specific gravity of the acetone. This was found to be the case with specimens of urine containing albumin, but aqueous solutions of serum yielded a precipitate which did not settle readily indicating that some other constituent of the urine affected the precipitate. Various constituents of normal urine were tried and it was found that if a small amount of monobasic sodium phosphate was added to the albumin solution, the precipitate would settle as rapidly as from urine. It was soon observed that in order to obtain satisfactory results, the urine must be distinctly acid, and for this purpose acetic acid was added to the acetone.

Method—Filter the urine if cloudy and measure 1 cc. from a pipette or burette into a 5 cc. graduated test tube having an internal diameter of 9 mm. Dissolve about 0.04 gm. of monobasic sodium phosphate in the urine and fill the test tube to the 4 cc. mark with a mixture of 98 volumes of acetone and two volumes of glacial acetic acid, both of U. S. P. quality. Close the test tube with a stopper, invert slowly six or seven times and then shake vigorously for thirty seconds. Allow the test tube to stand in a vertical position for exactly fifteen minutes; read off the volume of the precipitate and determine the percentage of albumin by reference to the following table:

Cubic Centimeters Precipitate	Percent Albumin	Cubic Centimeters Precipitate	Percent Albumin
0.20	0.09	0.75	0.91
0.25	0.13	0.80	1.01
0.30	0.17	0.85	1.10
0.35	0.22	0.90	1.19
0.40	0.29	0.95	1.29
0.45	0.37	1.00	1.38
0.50	0.45	1.05	1.48
0.55	0.54	1.10	1.59
0.60	0.64	1.15	1.72
0.65	0.73	1.20	1.86
0.70	0.82	1.25	2.05

If more than 1.25 cc. of precipitate is obtained, dilute the urine with an equal volume of water and make a new test, using 1 cc. of the diluted urine, and multiplying the percentage found in the table by two.

In compiling this table, sixteen aqueous solutions of serum albumin varying in strength from 0.1% to 2.0% were prepared. These solutions were standardized in the following manner. The albumin was precipitated with potassium mercuric iodide, heated in a water bath, separated by filtration and determined by the Kjeldahl method using the factor 6.3. About forty determinations were made upon each of these solutions by the acetone precipitation method.

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The Charles B. Towns Hospital, for the Treatment of Drug Addictions, Alcoholism and Nervous Diseases, 203 Central Park West, at 89th St., New York City, extends an invitation to all physicians to visit its new quarters, recently purchased, and familiarize themselves with the method and treatment. The Towns Hospital has been established 14 years. It is operated under conditions which render the alienation of the patient from his physician impossible. There is nothing secret; physicians are kept informed from the first to the final dose of medication and a complete bedside history of the case is fully charted. Physicians are not only welcome during the treatment but are invited to follow every detail of its administration. The Towns Hospital is everything its name implies—a hospital in the strictest sense, under the direction of physicians and trained nurses experienced in the work. The active treatment requires only a few days and its brevity is a distinct advantage to out of town physicians who may desire to accompany their patients to the city. Rooms may be had en suite for those wishing such accommodation, and special provision is made for patients of moderate means.

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A curve was plotted from the average results obtained, and from this the table was constructed. The use of normal urine instead of water in making up the albumin solutions caused no difference in the results; and in a number of pathological specimens gave results which agreed closely with those obtained gravimetrically. While it cannot be expected that a method of this kind will give accurate results, yet if carried out with proper attention to details it will be found to give more accurate results than those obtained by other methods based upon the volume of the precipitate.

The results are not influenced by ordinary variations in temperature, nor by the changes in acidity or amount of phosphates caused by the varying composition of different urines.

Considerable variations in the diameter of the measuring tube or in the manner of mixing the liquids were found to affect the results.

The precipitate settles so rapidly that after fifteen minutes the volume changes very slowly. For this reason, it did not seem necessary to consider centrifugal separation as a means of shortening the method, although it is probable

that good results might be obtained in that way.
Department of Chemical Research.

Even yet a June bug gives me a thrill, and the grip of his horny legs on my finger will set my associative memory working as will few things else. For me he is a living question, a puzzle, a hard little lump of primeval nature. Above all, he is a scarab. Around his foolish head lingers a glory visible only to the mind's eye, but made up of vestiges of Karnak and Thebes, of Isis and Orus and the dog Anubis.—*The Atlantic Monthly*, April, 1912.

The soft thud and patter of rain upon the roof are as musical to the imaginative listener as is any symphony. Monotonous dripping on thick leaved trees soothes one's weakness, and makes the importunities of life seem easily resisted. One can be lulled to fair visions during a transient spring shower and gain the sense of sharing the destiny of nature.—*The Atlantic Monthly*, April, 1911.

Defective Elimination

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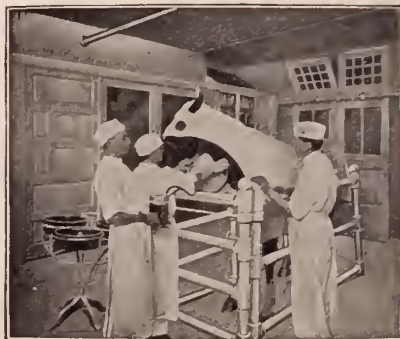
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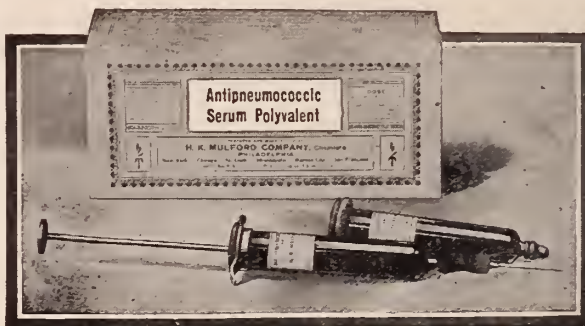
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*Rufus Cole, M. D., New York, 1913. Jour. A. M. A., lxi, No. 9, p. 663.

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PROPHECY OF PETITION.

The following verse was written by Dr. S. Weir Mitchell but a short time before he laid him down to sleep:

I know the night is now at hand,
The mists lie low on hill and bay,
The autumn sheaves are dewless, dry,
But I have had the day.
Yes, I have had, dear Lord, the day;
When at Thy call I have the night,
Brief be the twilight as I pass
From light to dark, from dark to light.

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Vermont Medical Monthly.

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NUMBER 11

ORIGINAL ARTICLES.

FRACTURES OF THE SPINE AND PELVIS.

BY

FREDERIC J. COTTON,

Boston.

Fractures of spine and pelvis are interesting for several reasons.

They are common; they are serious; they are often misinterpreted or overlooked; there are no clean-cut specifications for diagnosis in either class; and, save for the question of death, or recovery, nothing is available as to prognosis;—as to the chance of recovery of useful function, or the influence of any treatment on this chance, you may look in vain in the standard text-books for so much as a word of real information. I know, because I just looked last week.

Now as to the spine fractures, what I have to say today has nothing to do with the wearisome old question of laminectomy, that is never going to be answered save by leaving it to skilled judgment in the individual case.

What I want to talk about is the fracture of the dorso-lumbar spine without damage to cord or cauda, or substantially without any; how to recognize it; how to handle it; what to expect in the way of results.

A foreword as to causes.

Fracture of the spine—dorsal or lumbar—is a flexion lesion. Whether the injured man has been crushed under a weight, falling on head or shoulders, whether he has fallen on his feet, or in a sitting position, or has struck on head and shoulders, matters little, save in the degree of trauma.

The lesion is a crushing of one vertebral body (rarely more) in front. Sometimes the intervertebral disc is crushed, not uncommonly ligaments are torn, sometimes extensively; other vertebral damage is rare.

Most often the vertebra affected is between the tenth dorsal and the second lumbar vertebra,—at a level where the spine is not strong and where it is unsupported by the bony cage of the thorax.

The amount of displacement varies, of course. What displacement forward there is, is of the upper fragment forward, but often this displacement is almost wholly absent,—what there is merely a shutting together of the two parts, of a single vertebral body—a vertical impaction, and essentially of the front edge only.

In all spine fractures, nearly, it is the upper fragment forward; in practically all save those from direct crushing.

In some there is combined with the flexion an oblique shearing effect from the falling weight of the upper half of the body—this is common with the severest falls—but these cases are those with crushed cords.

In the luckier cases without cord damage we have pure flexion as the cause in nearly every case and the lesion is as described above.

The laity are perfectly sure that no man's back is broken if he can move his legs—and what the layman believes his doctor is very apt to pay attention to unless he has definite contrary views. At least twice lately I have seen broken backs that the doctor said could not be broken because the man could walk.

The diagnosis in no way depends on this; walking may not even be very painful, and the presence of other injuries may well lead to entire overlooking of a spine-fracture.

The signs to be looked for are:

1. Local pain.
2. Local tenderness.
3. Local swelling (hematoma) not explained by a direct blow.
4. Deformity, not often a marked kyphos—usually only a change of curve—a convexity where the spine should be flat—a convexity apparently involving several vertebrae. Remember that without bony damage the anteroposterior curves *do not change*.
5. Nerve-root pain, and sometimes sensory disturbances.
6. X-ray evidence.

Yet, with all these points considered, cases are constantly overlooked. Misinterpretation of X-ray

plates is a factor. Here are two plates—both of lesions overlooked by good men. In one case the X-ray was taken for the man who first saw the case, and neither the attendant, nor the X-ray man was awake to the facts.

So much for the ease with which the lesion may escape recognition.

Now there is a feature of these cases I want to emphasize that has been quite overlooked—though important—the belly picture.

Some weeks ago I found at the hospital a case under preparation for laparotomy for exploration of a traumatised abdomen. He had been hurt the night before in a fall; the house surgeon felt sure he had a ruptured viscus, and a colleague of mine had seen him and provisionally agreed to the diagnosis.

There was a rather tender, board-hard abdomen, with distension; but the man had not been struck in the belly, and he did not look ill enough to match the story.

I turned him over, found the overlooked fracture high in the lumbar region; replaced the activity of surgical scrubbing with an activity expressed in purgatives and an enema syringe. After a couple of days the belly condition ceased to be troublesome.

This is a constantly recurring picture—I have seen it in a number of cases of spine-fracture without displacement, and in two cases with some displacement but without cord-lesion have seen the distension so severe, the obstipation so difficult to overcome, that the patient's life was threatened for several days.

One of these cases I reported—the other practically duplicated it.

Save for two publications of my own, I know of no mention of this complication in the literature.

Severe obstipation, tenderness (not severe), distension, real and severe spasm of belly muscles, moderate radiating pains back to part, and presently, vomiting, characterize the condition. Sometimes the temperature goes up.

It looks like a peritoneal lesion, but it isn't.

What it is is hard to say—probably a sympathetic disturbance. Probably the same explanation helps explain the distension in cases in which there is a cord-lesion also.

In cases in which distension is slight, or absent, there may be belly pain—characteristic girdle-pain from nerve-root pressure: It is well

to remember that muscle-spasm, particularly in the flanks, may accompany these pains,—and means nothing.

Now as to the treatment of these non-paralyzed spine-fractures.

Displacement may be corrected by thick pads opposite the lower fragment—gravity does the work.

But most cases call for no correction in gross.

All they need is a restoration of the normal curve—the normal lordosis. This also is brought about by adjusted pads beneath the back, slowly increased till the curve is normal. In part the fracture probably opens up, in the main the adjoining vertebrae share in a compensating curve. These patients, after two to four weeks may be gotten out of bed and put up in a jacket for six months, and do well. After a year they often seem practically normal in strength,—nearly normal in flexibility. The girdle-pains may persist for some time.

Unrecognized and untreated, they fall victims to increasing deformity, pain and rigid muscle-spasm, and this is true, whether we accept Kummell's "spondylitis traumatica" as a pathological entity or not.

Even these late cases improve very much if put in a brace, frequently re-fitted, that holds them, and that tends to bring the curve of the spine back to normal. Here of course, only purely compensatory curves are produced. The results are surprisingly good, sometimes well nigh perfect, though, of course, inferior to those in cases properly handled from the start.

Now as to our pelvis fractures.

The point to be considered here is treatment and prognosis. Both these items depend on the detailed lesion. Pelvis lesions fall very naturally into four broad divisions:

1. Lesions of the spine and of the crest of the ilium.
2. Symphysis separations.
3. Fractures destroying the continuity of the pelvic ring, of various sorts.
4. Central luxations, so-called.

Lesions of the anterior superior spine are uncommon. They may result from blows, but also from muscle violence. In my only case (seen 9 years ago) a boy of 19, running a race, thought something had struck him and had to stop crippled. When seen there was much swelling and a loose anterior spine evidently dragged off by

sartorius action. This was padded in place and presently became attached. Whether union was by bone I cannot say. The few cases of this sort noted seem to have left no disability. Union is slow.

Knocking off of part of the edge of the iliac crest, or pulling it off by muscle action, is a temporarily severe accident. The size of the piece varies; a loose piece is always felt.

The lesion is very painful because of the insertion of abdominal muscles on the crest; every breath moves the fragment.

Accurate reduction is impossible; the traditional girdle-swathe is worse than useless, for it drives the fragment inward. Sand-bags do best. Fortunately the fracture unites promptly with much callus.

I have notes of only a part of my cases of crest fracture. In all, so far as I can trace them, they suffered no permanent disability.

Separation of the symphysis is a straddle-lesion, from forced abduction. I have seen it but few times. One patient died of delirium tremens promptly. The other was operated on by me. Wiring of the symphysis was done. Some months later this patient was examined by Dr. R. B. Dixon who reported a good functional result. The records of the other two I cannot find.

Now as to the lesions involving the pelvic ring as a whole.

For the moment, disregard the elaborate subclasses. The bone is smashed—at one point or two, even three. Ligament lesions may be present,—hard to define.

The acetabular smashes, many of them, really belong in this class. For convenience I have classed these separately. The rest—single fractures, fractures of the rami on both sides, rami fractures with sacro-iliac damage—the double vertical fracture of Malgaine front and back, and even the cases complicated with real sacro-iliac luxation, really fall in one class, in that they result from crushing injuries, and in that the essential damage is the breaking of the pelvic ring in its continuity.

These are the cases that are not rarely fatal—fatal from shock, or from associated injuries, or not rarely from the complications of the fracture itself. Tearing of the rectum has occurred; Vander Veer reports a case fatal from tearing of the common iliac vessels. Rupture of the bladder is not unusual. Usually it is extraperitoneal,

and properly handled is amenable to treatment. Eastman of Indianapolis reports three successive cases, all recovering.

Rupture of the urethra is common in the male—rupture from the shearing effect of the displacement of the fragments, not from direct external violence.

There is such a case now on our service—in a boy—in which a permanent catheter promptly and nicely solved the problem. Usually a perineal section is called for. There would be no trouble with this complication if recognized, and no excuse for failure to recognize it.

Now as to diagnosis of the fracture of the pelvic ring itself.

There is one point I have only recently learned that I believe very important.

History of trauma, pain, lameness, helplessness, soreness, all make us suspect the lesion.

I believe we can do better. If the rami are broken there will be, first, the known swelling and local tenderness behind Poupart's ligament usually nearly opposite the femoral vessels, but there will also be a point of tenderness in the perineum. In nearly every man you can feel the ascending ramus of the ischium for nearly three inches in the perineum.

If there is a break there is a tender spot, and (in every case I have seen) an appreciable deformity. It is in this region, not the part accessible from rectum or vagina that the breaks come.

Given a definite finding of this sort (even many months later in overlooked cases) and I have no hesitation in making the diagnosis. Details of other lesions may usually have to wait for the X-ray. Our other signs, valuable enough, are not certain, nor do they give detailed information as to the site of the damage.

Now as to treatment—we treat the complications of course, but in the uncomplicated cases, however serious, we can do little but steady the fragments,—tapping hematmata if need be—treating abrasions—but otherwise contenting ourselves with the steadying pelvic belt or sand bags.

Broadly speaking, none of the cases in this class call for reduction, or reward any attempt in this line unless there is upward luxation at the sacro-iliac. This we should reduce by leg traction if we can. I shall presently show a case in which I couldn't.

These cases are all helpless in bed for two to five weeks, then get about very slowly. The bones

are solid early but they stay tender and lame. Even with a girdle belt there is much disability for many weeks. Hence, the prognosis has been assumed to be very unfavorable—which is not necessarily true. Of this, more later.

Now as to central luxation. This name is used loosely to cover different degrees of lesion.

They are all due to force transmitted through the femur in falls on the feet, or on the trochanter. (They have in common the smashing of the acetabulum.) In some the femoral head goes right*through into the pelvic cavity. In others it merely pushes the broken acetabulum in, more or less.

Accepting the broad classification, we must accept the lesion as common—at least vastly commoner than would appear from the books. (I personally have seen at least a dozen and a half cases).

The liability to complications is not great.

In one case of mine, the displacement kinked off the external iliac artery necessitating prompt operation; there have been cases of intrapelvic tearing, probably from the break in the rami which is usually present.

Essentially the lesion is a driving in of the pelvis in front of the femur. There is a grave chance of confusion with fracture of the femoral neck. The differential diagnosis depends on the signs of pelvic fracture as such,—broken rami, tenderness about the groin, etc.

The foot may be inverted or everted, or neither. All motions are limited. There is one-half to one inch shortening and the trochanter is distinctly less prominent. For details we must have the X-ray.

Given the diagnosis we must do something. (This is *the* fracture of the pelvis that calls for reduction,—that promises disability in proportion, and only in proportion to our failure to reduce). If the head has gone clear through, disengaging manoeuvres of various sorts are in order; so too manipulation from within the rectum; failing in all else open operation as in a case of Tully Vaughn's. I have had no experience with the penetrating cases, but have had several of the simpler ones, and have had good luck with them.

Reduction is necessary and it requires real force to reduce.

Just how it is done is not material, direct outward traction with a sling in the groin, or leverage over a cushion between the legs, or my own pet scheme of reduction by extreme flexion, then

adduction over the anterior superior spine as a fulcrum.

All that is necessary is to pull the pelvis into shape.

After that it does not greatly tend to displace but I have felt it safer to use longitudinal traction in the groin for a fortnight.

Only a word more as to classes, and I am done with all but the results.

There is a class in the books of fractures of the ischium alone. This thing does not happen. There are a few cases collected by Malgaigne, some perhaps genuine, but we had better forget them.

When the ischium goes so does the iliac ramus, always, so far as I can see.

Now as to results, I am going to talk my own cases, and those I have seen, realizing that they chance to represent a disability average less than that of the few recorded lists. I believe these cases properly handled, are not as bad as we have thought.

CLINICAL NOTES ON FRACTURES OF THE SPINE AND PELVIS.

(a) Of cases of the anterior superior spine, I have had one case; this united after a few weeks, with an early return of fair function; end result not traced.

(b) Of fractures of the crest, there are five cases only; . . .No. I, fracture solid at four weeks; walking at two weeks. . . .No. II solid at one year; no symptoms referable to lesion. No. III, examined two years later; story of using a crutch for two weeks; later recovery, and now working as usual. No. IV looked up after two years. This man limped and used a cane for eight months, but now has no trouble whatever. No. V solid at one month and walking.

(c) Of separations of the symphysis, six cases: one case with a wide separation with no other bone lesions, operated and wired by me; ten months later reported as having excellent function.

A second similar case, not operated on, did well, with a great diminution of the interval, under ordinary treatment. Late result not known.

Another case—separation of symphysis with ramus fracture; good primary result; late result not known.

In two other cases associated with other pelvic lesions, the results were perfect, and the separa-

tion of the symphysis seemed to have no untoward results.

In the sixth case, the man died of delirium tremens. Again a pure separation, with death not long after the injury. No attempt at reduction.

(d) In fractures of the rami breaking the "ring of the pelvis," there are fifteen cases. In only one of these can the result be called bad. This was a fracture of the rami with sacro-iliac strain on the same side, first seen ten months after the injury. His disability, which was nearly complete, resulted not in any way from bone damage, as such, but from the distortion and clumsiness due to fixation of the limbs by muscle contracture, resulting from faulty attitude, and from refusal of any rational treatment.

One other case with a fracture front and back still complained of lameness at fifteen months. This lameness was not great, however, and was undoubtedly complicated by the fact that the man had a legal case pending.

The third case, eight months later, had slight ability; not able to lie on the well side in sleep—etc., but evidently on the way to recovery. patient was a man weighing 250 lbs.

another patient with fracture of the rami (injury of the symphysis with severe sacro-iliac strain), recovery was complete at eight months without any limp, and in another case—a fracture with a little displacement, in front, with sacro-iliac strain, there was entire recovery with no limp in six months.

In the sixth case there was still some disability at six months from sacro-iliac lameness, in a case of sacro-iliac tearing complicated with fracture of the rami in front. Disability already comparatively negligible.

In another case, a woman seen two years later with a fracture front and back. She was troubled somewhat with long standing or severe exertion two years after the injury, but able to work. This was a woman about 62 years of age.

A fracture of both rami looked up after a year gave a history of two weeks in the hospital; two weeks use of cane; since then no disability whatever.

The next case with fractured rami got a perfect anatomical result, approximately, and was soon walking. Late result not traced.

Another case with extreme displacement of a public fracture got similar prompt result; is still convalescing.

One case of fracture in front, sacro-iliac strain, in a man of fifty years still shows some lameness at six months. Another similar lesion in every heavy man of 60 years is gradually recovering from his lameness at eight months.

In another case the man was walking at eight months after a like injury, and progressively getting over his lameness, when he developed a double pneumonia of which he died.

There are three cases in this list of convalescents who are doing perfectly well, but have not as yet recovered function. One of these was a case of ramus fracture with great displacement in which reduction was done. One of these was a boy in whom ramus fracture was complicated with rupture of the urethra.

(e) In regard to acetabular fractures, and the so-called central luxations, one case was seen thirty-two years after the injury; an unreduced central luxation, listed in the old hospital records as fracture of the neck of the femur. This man has been doing his work with a limp, but without serious disability all these years, and was seen on his entry into the hospital for a minor injury.

In another case of central luxation and smash-had produced a kinking of the external iliac artery in the pelvis, and entire loss of circulation in the leg. Prompt open operation freeing the artery brought about good results, as far as the circulation was concerned. There was in this case also splintering of the rami, and complete sacro-iliac luxation. The latter could not be reduced. There was also extensive hematoma formation, but in spite of all this, the man regained almost perfect function within six months.

In another case the whole side of the pelvis was driven in, and the ilium fractured at the back; no reduction in this case. Was first seen two months later. Function then good but some trouble from associated injury to the sciatic nerve. Seen a year later; function then absolutely perfect. This was a boy of thirteen.

In another case of central luxation and smashing of the rami; reduction for the first time by my own method of leverage (1908), maintained by lateral traction, and got a perfect result.

In another case located about a year after the injury, the results were perfectly good as to disability; still some trifling occasional pain.

In another case with fracture of the ramus, fracture at the back and driving in of the acetabulum (not reduced), there was still some consider-

able lameness at the end of eight months, but with steady improvement.

In another case of driven in acetabulum; reduction, and lateral traction: a good early result; later result not traced.

In the last case a similar lesion; the early result excellent; late result not known.

The conclusion is, I think, that these pelvis lesions of all classes practically, even in the severest of them with acetabulum fractures, get very much better results than we usually suppose.

DOUBLE EXTRA-UTERINE PREGNANCY.

BY

G. M. SABIN,
Burlington, Vt.

The following is a report of a case of double extra-uterine pregnancy occurring during my surgical service at the Fanny Allen Hospital last June.

History.—Mrs. A. F.; married 36 years; American.

Family history, negative.

Patient had always been well, reporting no illnesses except confinement. Married 25 years. Had six full term normal labors with children now 21, 20, 18, 16, 14, 12 years and one miscarriage two years ago. No history of gonorrhoea or any pelvic inflammatory condition. Menstruation had always been regular, occurring every three weeks, flowing 7 days. Her last normal period was April 1, 1914. About April 15 she suddenly began to have severe pains in the lower abdomen. On the first day pains were so severe that she fainted several times. These pains have continued almost daily with varying severity until June 4, 1914, the day of the operation.

Sometimes the pains have required morphine. Beginning May 1 and almost daily since she has had some vaginal discharges of blood in varying quantities. Sometimes she has had slight nausea. When the pains first came on she thought herself pregnant and having a miscarriage. She entered the hospital thinking she had acute appendicitis complicated with a pregnancy of two months. Flowing slight from vagina. Temperature 100 2/5. Pulse 96. Tender on pressure over

lower abdomen especially on the right side and with considerable muscular rigidity. Vaginal examination gave much tenderness in the pelvis and a large mass in the cul-de-sac resembling a pregnant uterus retroverted and which could not be replaced.

Operation.—Ether. Median incision. A tumor-like mass was found filling the pelvis and extending $\frac{1}{4}$ way from symphysis to the umbilicus. The omentum and intestines were firmly bound to the mass of new and old adhesions. One separating the adhesions a walled off cavity was found behind the uterus in the cul-da-sac and extending above the promontory of the sacrum, containing over one quart of thickly clotted blood. The right tube from which the blood had escaped was enlarged, very adherent and had a rupture easily admitting the tip of the finger. The left tube was adherent to the uterus and intestines, enlarged and contained a mass of clotted blood about the size of a medium-sized lemon. This tube was unruptured.

Appendix was atrophied and adherent, showing old chronic inflammation. Appendix removed. Both tubes and ovaries were removed. Abdomen was filled with saline solution and wound was closed without drainage. The patient made an uneventful recovery and left the hospital at the end of three weeks.

This was undoubtedly a case of double extra-uterine pregnancy with rupture of the right tube and the left tube still intact. The vaginal examination, however, was most deceiving, the mass which proved to be a large hematoma, resembling a retroverted pregnant uterus which could not be replaced by vaginal manipulation.

I wish to take this opportunity to urge the use of pituitary liquid after abdominal operations especially when the patient is troubled with gas in the intestines. It is especially indicated when there is any intestinal paralysis. The results I have obtained in some cases when all other methods have failed are only short of marvellous. One patient after an uncomplicated ovariectomy and appendectomy, who resorted all available means to relieve the intestines for five days and was in an almost moribund condition, had a movement in bed with complete relief and subsequent recovery, twenty minutes after the liquid was injected.

I think that this valuable remedy will be the means of saving many lives that would otherwise

Vermont Medical Monthly.

A Journal of Review, Reform and Progress in the Medical Sciences.

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EDITORIAL.

In view of the alarming increase in insanity and the consequent seriousness of this social problem, the following resolutions unanimously adopted by and therefore representing the individual opinion of a body of men made up of men who can speak most authoritatively on the subject, is of special interest.

The alienists and neurologists of the United States at their third annual meeting under the auspices of the Chicago Medical Society for the purpose of discussing mental diseases in their various phases, which was held from July 13-17, reported the following resolutions which were unanimously adopted.

The committee on the "Prevention of Insanity," reported the following resolutions, which were unanimously adopted:

Whereas, it is well recognized by alienists and neurologists the world over that certain major factors are the chief causes of physical conditions accompanied by mental derangement and deficiency, and

Whereas, these major causes are largely, if not wholly, controllable and eradicable, and

Whereas, these major causes are alcoholism, habit producing drugs, venereal diseases, work in unsanitary and unhygienic surroundings, and hereditary influence including the immigration of the physical and mental unfit,

Therefore, Be it Resolved, First: That we recommend to the proper state authorities, the absolute control of the sale of alcohol until such time as actual prohibition be enacted.

Second: That the sale of all habit inducing drugs be strictly regulated in all states of the Union.

Third: That municipal or state control of venereal diseases be established, with proper treatment for indigent patients, to the end that the spread of syphilis and gonorrhoea be prevented.

Fourth: That proper, special hospitals for the care and treatment of alcoholism and drug addictions be established.

Fifth: That municipal, state and national inspection of labor conditions be regularly maintained and child labor abolished.

Sixth: That no known defective, dangerous to himself and to others, should be permitted to have unrestricted liberty.

Seventh: That adequate teaching of the principals of heredity and sex life be initiated and fostered in the home with the view to its introduction into the curriculum of schools—above the grammar grades, this instruction to be given to the sexes separately.

Eighth: That the various states pass reasonable and universal marriage laws, that will be reciprocal, in preventing the marriage of the physical and mental unfit.

Ninth: That a psychopathic laboratory be connected with the criminal courts, common schools, railroads, transportations and public service utilities, responsible for the actual safety of the general public should have their employees regularly examined as to their physical and mental fitness.

Tenth: That inasmuch as state, county and city public health institutions should have as their superintendents, men of highest qualifications, who may devote their best efforts to their tasks, we recommend that all such positions be subject to civil service examinations.

Eleventh: That in addition to the above, we recommend a nation-wide campaign of education conducted through the public press, university and medical schools, boards of health, state, county and city boards of education, women's clubs and other proper educational mediums, upon the true significance of the development—physical, mental and moral—of the individuals and the race and finally, we recommend that a committee be appointed to promote the enactment of the above resolutions.

The committee on "Alcoholism as a Causative Factor of Insanity" reported the following resolutions, which were unanimously adopted:

Whereas, In the opinion of the meeting of alienists and neurologists of the United States in convention assembled, it has been definitely established that alcohol when taken into the system acts as a definite poison to the brain and other tissues; and

Whereas, The effects of this poison are directly or indirectly responsible for a large proportion of the insane, epileptics, feeble-minded, and other forms of mental, moral and physical degeneracy; and

Whereas, The laws of many states make alcohol freely available for drinking purposes; and therefore cater to the physical, mental and moral degradation of the people; and

Whereas, Many hospitals for the insane and other public institutions are now compelled to admit and care for a multitude of inebriates; and

Whereas, Many states have already established separate colonies for the treatment and re-education of such inebriates, with great benefit to the individuals and to the commonwealths,

Therefore Be it Resolved that we, unqualifiedly condemn the use of alcoholic beverages and recommend that the various state legislatures take steps to eliminate such use; and be it further

Resolved, That we recommend the general establishment by all states and territories of special colonies or hospitals for the care of inebriates; and

Resolved, That organized medicine should initiate and carry on a systematic, persistent propaganda for the education of the public regarding the deleterious effects of alcohol; and

Be it Further Resolved, That the medical profession should take the lead in securing ade-

quate legislation to the ends herein specified.

The committee on "Syphilis as a Causative Factor of Insanity," reported the following resolutions, which were unanimously adopted:

Whereas, Syphilis is responsible for a large percentage of all insanity and mental deficiency.

Be It Resolved That:

First: Health departments, (municipal and state) should be equipped to make laboratory examinations for venereal diseases.

Second: All hospitals for the insane should be equipped to make laboratory examinations for venereal diseases.

Third: Hospitals and dispensaries for the treatment of venereal diseases should be provided.

Fourth: Physicians should be compelled by law to report cases of venereal diseases, as is now done in other contagious diseases.

Fifth: Applications for marriage should be required to furnish health certificates.

Sixth: Lectures and bulletins should be offered freely to the public regarding venereal diseases.

Seventh: Newspapers should be requested to use their best influence to educate the people concerning venereal diseases.

Eighth: Sex hygiene should be taught in the public schools, above grammar grades, to the sexes separately.

The proceedings of the third annual meeting of alienists and neurologists of the U. S. held under the auspices of the Chicago Medical Society, July 13-17th, 1914, will be published in one volume by the *Illinois State Medical Journal*. It will be in double column, the type and size of page, the same as the *Journal*, and will comprise from four to six hundred pages. This book will contain the papers read and their discussions, together with resolutions adopted. The subjects covered are, acquired insanity, epilepsy, mental defectives, alcoholism, Abderhalden test, syphilis, etc.

The proceedings will be published and ready for distribution by October or November, 1914. As only a limited number is left unsubscribed for, those wishing the publication will please send their subscription at once, as there will not be a second edition. The price of the book is \$2.00. Send subscription to the Editor of the *Illinois State Medical Journal*, Dr. Clyde D. Pence, 3338 Ogden Ave., Chicago Ill.

NEWS ITEMS.

An editorial in the *Journal of the American Medical Association* under date of July 18th, states that never in the history of medicine has there been such a unanimous verdict of repudiation of an alleged curative measure as is the case with Friedmann's remedy. The matter seems to have been definitely settled for the present by the open discussion through four meetings of the Berliner med. Gesellschaft and at the discussion in the *Vienna K., K. Gesellschaft der Aerzte*. The general verdict is that on account of the lack of any pronounced curative action from it and of the dangers connected with it, its use is warned against. The editorial concludes with the statement that as the matter seems now definitely settled, no more space will be devoted to it in the future.—*Ohio St. Bd. Health Bul.*

The following officers were elected for the ensuing year at the 101 Annual Meeting of the Vermont State Medical Society: President, Dr. W. W. Townsend, Rutland; Vice-President, Dr. J. N. Jenne, Burlington; Secretary, Dr. J. M. Hamilton, Rutland; Treasurer, Dr. C. F. Dalton, Burlington.

The governors of the New York Skin and Cancer Hospital announce the following course of lectures by Dr. L. Duncan Bulkley on Wednesday afternoons at 4:15 o'clock Medical Aspects of Cancer.

November 4. Nature of Cancer.

November 11. Frequency and Geographical Distribution of Cancer.

November 18. Metabolism of Cancer.

November 25. Relation of Diet to Cancer.

December 2. Medical Treatment of Cancer.

December 9. Clinical Considerations and Conclusions.

Each lecture will be preceded by a half-hour Clinical Demonstration of Dermatological Cases.

The lectures will be free to the Medical Profession, on the presentation of their professional cards.

Rutland County Medical and Surgical Society. Quarterly meeting, Hotel Berwick, Rutland, Vt. Tuesday, October 20, 1914, at 11 A. M.

Program.—Reports. New Business. Symposium on obstetrics. Paper: "Twilight Sleep in Obstetrics with Remarks on the Use of Pituitrin, Ray E. Smith, M. D. Discussion opened by C. B. Warren, M. D.

Paper: "Antisepsis During Labor," A. H. Belle-rose, M. D. Discussion opened by J. H. Miller, M. D.

Paper: "The After Care of Obstetrical Patients," J. J. Dervin, M. D. Discussion opened by Thos. Hagan, M. D.

Paper: "Immediate Repair of the Perineum," G. D. Parkhurst, M. D. Discussion opened by E. M. Pond, M. D.

E. M. Pond, President. F. H. Gebhardt, Secretary.

Whether or not a case of meningitis induced by the use of a nasal douche is an "accident" within the meaning of an accident insurance policy was a problem placed before the full bench of the supreme court recently in Boston. A policy for \$7500 in the Travelers' Insurance Company claimed by Alice M. Smith for the death of her brother, Charles G. Smith, hangs on the court's definition.

Smith, who was employed as a cashier at 95 Milk street, had an operation on his nose several years ago. After that he used a nasal douche of a salt solution several times a week, and on Sept. 24, 1912, he snuffed the douche too strenuously. He felt the water go into his ear, and shortly afterward an abscess formed in the ear. On Sept. 24, 1912, he died from meningitis, caused, it was claimed, from infection from the ear abscess entering the brain.

The clause in the policy relied on specified the policy was issued to insure "against bodily injuries effected directly or independently of all other causes through external, violent and accidental means."

Dr. Eugene A. Crockett, at the trial in the superior court, said that between the ear and the brain there is a solid sheet of bone about as thick as a sheet of paper; that the bone should not have a hole in it under normal conditions, but that about once in a thousand skulls there will occur a hole more or less large. The doctor did not look for a hole in this bone in Smith's skull, but was sure there must have been one, in view of the meningitis.

Judge Fox ordered a verdict for the defendant and reported the case to the full bench.

Dr. Charles A. Benway from Boston has located in Enfield, N. H.

Dr. Z. F. Lamb has left Enfield, N. H., and located in Keene.

A course of lectures and clinics to be held at the Rutland, Vt., City Hospital under the auspices of the Medical and Surgical Staff. 1914-1915.

Oct. 5, 1914. Lecture, Hematology, F. E. Sondern.

Oct. 12, 1914. Lecture, Physiological Chemistry, Victor Meyers.

Oct. 19, 1914. Lecture Medical Pathology, J. G. Adami.

Oct. 26, 1914. Lecture, Surgical Pathology, O. S. Hillman.

Nov. 2, 1914. Lecture, Clinical Bacteriology, H. J. Perry.

Nov. 10, 1914. Lecture, Sero Diagnosis and Sero Therapy, Ellis Bonime.

Nov. 16, 1914. Lecture, Cardio-Vascular and Renal Diagnosis, R. H. Halsey.

Nov. 25, 1914. Lecture, Neuro-Pathology and Diagnosis, Smith Ely Jelliffe.

Dec. 7, 1914. Lecture, Roentgen Ray Diagnosis, Louis G. Cole.

Dec. 14, 1914. Lecture, The Possibilities of Preventive Medicine, M. J. Rosenau.
1915.

Jan. 11, 1915. Surgical Clinic and Lecture, John F. Erdmann.

Jan. 18, 1915. Medical Clinic and Lecture, Gilman Thompsen.

Jan. 25, 1915. Eye Clinic and Lecture, John M. Wheeler.

Feb. 1, 1915. Ear Clinic and Lecture, James P. McKernon.

Feb. 8, 1915. Nose and Throat Clinic and Lecture, C. D. Coakley.

Feb. 15, 1915. Dermatological Clinic and Lecture, Howard Fox.

Feb. 22, 1915. Genito-Urinary Clinic and Lecture, E. L. Keyes, Jr.

Mar. 1, 1915. Diseases of Children Clinic and Lecture, G. R. Pisek.

Mar. 8, 1915. Gynecological Clinic and Lecture, William P. Graves.

Mar. 15, 1915. Diseases of the Colon and Rectum Clinic and Lecture, S. C. Gant.

Association in San Francisco, to Honolulu, Japan, the Philippines, and China, with return optional via Siberia and Europe (war permitting) or via Canada. This being the first party of American physicians to visit the Far East and the new possessions of the United States, a most cordial welcome may be expected by authorities and members of the medical profession. The club would like to make its enterprise as representative as possible, and asks all those interested to communicate with the secretary, Dr. Richard Kovacs, 236 East Sixty-ninth Street, New York.

NEWS OF MEDICAL SCHOOLS.

Dr. Eliot Round Clark, formerly assistant professor of anatomy at Johns Hopkins University, has been made professor of anatomy at the University of Missouri, Columbia. Dr. M. P. Ravel, formerly of the University of Wisconsin, has been made professor of medical bacteriology and preventive medicine and director of the public health laboratory at the same institution. Dr. Floyd A. Martin has been appointed instructor in pathology. While only the first two years of the medical curriculum are taught at the University of Missouri, there have been added recently a course in minor surgery and one in physical diagnosis. Dr. Max W. Myer, formerly professor of gynecology and obstetrics in the University of Missouri, and later of St. Louis, has been made professor of clinical medicine and surgery.

The next session of the department of tropical medicine of Harvard University will begin on October 1, 1914, and will continue until April 10, 1915. The courses will be open to graduates from recognized medical schools; properly qualified students (not necessarily graduates in medicine) will be admitted to single courses, or to any number of courses which they may care to select from the various subjects offered. Students in the Harvard Medical School may also follow courses in the School of Tropical Medicine. Women are admitted on the same terms as men. The tuition fee for students pursuing all the regular courses is \$100 for the school year; special students not paying the

THE TRAVEL STUDY CLUB OF AMERICAN PHYSICIANS,

which made a successful study tour of Europe last year, has completed plans for its 1915 study tour to the meeting of the American Medical

regular fee must pay a special fee for each course taken. Laboratory material will be charged at cost. A detailed announcement of the complete course in tropical medicine may be obtained by applying to the dean of the Harvard Graduate School of Medicine, Boston.

Dr. John B. Harvie, of Troy, N. Y., has been appointed clinical professor of surgery at the Albany Medical College.

Dr. L. D. Bristol, formerly assistant professor of bacteriology and director of laboratories at Syracuse University, N. Y., has been appointed professor of bacteriology and pathology at the University of North Dakota and director of the State Health Laboratory, succeeding Dr. Gustaf Ruediger, who resigned to become director of a hygienic institute in La Salle, Ill. Dr. J. E. Cox, also from Syracuse, N. Y., has been appointed professor of pathology at the University of North Dakota.

The discovery of an atoxic variety of antigonococcic vaccine was announced at last month's session of the Academie des Sciences, Paris, by Dr. Charles Nicoile, director of the Pasteur Institute of Tunis, and Dr. L. Blaizot. The curative power of the vaccine is considerably increased. Their original method, also applied to other microbes, will be made public shortly.

A nationwide war against medical nostrums has just started in Australia.

BOOK REVIEWS.

THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume III, Number IV. Octavo of 254 pages, 65 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published Bi-Monthly. Price per year, paper, \$8.00; cloth, \$12.00.

A very interesting discussion of Arthroplasty of the Hip giving several cases of varying conditions, illustrated, is well worth the price of this number. Other cases of wide variety, all of practical interest to the physician and surgeon make up an especially valuable number.

DISEASES OF THE SKIN, INCLUDING THE ACUTE ERUPTIVE FEVERS.—By Frank Crozer Knowles, M. D., Instructor in Dermatology in the University of Pennsylvania; Clinical Professor of Dermatology, Women's Medical College of Pennsylvania; Fellow of the College of Physicians of Philadelphia, etc. Octavo, 546 pages, with 199 engravings and 14 plates. Cloth, \$4.00, *net*. Lea & Febiger, Publishers, Philadelphia, and New York, 1914.

This new book on Diseases of the Skin is especially well designed to meet the needs of the student and practitioner. Every eruption of the skin is discussed, the treatment outlined is clear but confined to well tried remedies; the illustrations are new and of wide variety of conditions. It is a welcome addition to the literature on diseases of the skin.

ROCHESTER AND THE MAYO CLINIC.—A fair and unbiased story calculated to aid other physicians to greater cures and larger incomes. By G. Wiley Broome, M. D. 12 mo, 160 pages, 3 illus., bound in cloth. Price \$1.10 postpaid.

This book gives something of the history of surgical work at Rochester and the author's impression of the surgical work at St. Mary's Hospital. It gives the impression of an ethical way to advertise the Mayo Clinic.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume II, Number VI. (December). Octavo of 186 pages, illustrated, Philadelphia and London. W. B. Saunders Company, 1913. Published Bi-Monthly. Price per year, paper, \$8.00; cloth, \$12.00.

This number has a fine article on pulmonary tuberculosis treated by injection of nitrogen gas into the plura with a description of Dr. Murphy's apparatus. This one article is well worth the price of the number. Other case discussed are fractures, ankylosis of joints, spinal curvature with compression, cholecystitis, etc.

Vol. III, No. 2 has a discussion of surgical and general diagnosis that every physician should read. Duodenal ulcer, goitre, tuberculosis of the kidney, and acute pancreatic cyst are discussed. This is a particularly interesting number.

NERVOUS AND MENTAL DISEASES.—By Joseph Darwin Nagel, M. D. Consulting Physician to the French Hospital of New York, Member New York Academy of Medicine, Honorary Member Societe Royal de Belgique, etc., Physician to St. Chrysostom's Dispensary. New (2nd) edition, revised and enlarged, 12 mo, 293 pages, with 50 engravings and a colored plate. Cloth, \$1.00, *net*. (The Medical Epitome Series). Lea & Febiger, Philadelphia and New York, 1914.

This little book is a carefully prepared synopsis of the literature on this subject and is a very

satisfactory book for physicians or students desiring an epitome on the subject.

PRINCIPLES OF SURGERY.—By W. A. Byran, A. M., M. D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. Octavo of 677 pages with 224 original illustrations. Philadelphia and London. W. B. Saunders Company, 1913. Cloth, \$4.00 *net*.

The purpose of this book is not only to present the principles of surgery but to discuss in general the principles of diagnosis both surgical and medical. This is a very logical position, for the same principles underlie much that is common to both medicine and surgery. The book is well written and the illustrations are good. It will be a valuable book for students or practitioners.

INFECTIONS OF THE HAND. A GUIDE TO THE SURGICAL TREATMENT OF ACUTE AND CHRONIC SUPPURATIVE PROCESSES IN THE FINGERS, HAND AND FOREARM.—By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School, Chicago. New (2nd) edition, thoroughly revised. Octavo, 463 pages, with 147 illustrations. Cloth, \$3.75, *net*. Lea & Febiger, Philadelphia and New York, 1914.

Infections of the Hand. This book covers the most important field. It is a careful discussion of the anatomy of the hand especially with reference to the tendons, sheaths and consequently the paths for infection to travel. It discusses the pathology of hand infections and suggests treatment which will limit the crippled hands following infection to a much smaller percentage than has existed. This book is a most welcome addition to the medical literature on this important subject.

THE READY REFERENCE HAND-BOOK OF DISEASES OF THE SKIN.—By George Thomas Jackson, M. D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, New York. Seventh edition, thoroughly revised. 12 mo, 770 pages, with 115 engravings and 6 colored plates. Cloth, \$3.00, *net*. Lea & Febiger, Philadelphia and New York, 1914.

This book is so well and so favorably known that it does not need an introduction. This seventh edition is brought up-to-date and includes articles on vaccins, salvarsan and the use of the X-Ray. There are also, many new illustrations. This book meets the need of the general practitioner and the student of medicine admirably.

BLOOD PRESSURE IN MEDICINE AND SURGERY. A GUIDE FOR STUDENTS AND PRACTITIONERS.—By Edward H. Goodman, M. D., Associate in Medicine in the University of Pennsylvania. 12 mo, 226 pages, illustrated. Cloth, \$1.50, *net*. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

Dr. Goodman has given a brief but clear discussion of the various phases of blood pressure and its relation to disease. Blood pressure has become such an important factor in diagnosis that every physician should become thoroughly acquainted with its relation to disease. This book is destined to meet this need.

MODERN SURGERY, GENERAL AND OPERATIVE.—By J. Chalmers DaCosta, M. D., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia, Pa. Seventh Edition, Revised, Enlarged and Reset. Octavo of 1515 pages, with 1085 illustrations, some of them in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, \$6.00 *net*, Half Morocco, \$7.50 *net*.

The fact that this work has gone through seven editions is sufficient evidence that it has met the need of physicians and students. The statements are clear, brief and to the point, the descriptions are lucid and the illustrations are good. The book merits the reputation and success it has had.

THE PRINCIPLES OF PATHOLOGIC HISTOLOGY.—By Frank B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School and Pathologist to the Boston City Hospital. Octavo of 677 pages, with 497 figures containing 683 illustrations, 124 in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, \$5.50 *net*.

A concise treatise on the principles of pathology from the morphological view point. The author brings out clearly the relation of cause and effect in pathological conditions. The book is profusely illustrated and is a valuable addition to this department of medical knowledge.

REPORT OF THE COMMITTEE FOR THE PREVENTION OF BLINDNESS.—State of New York. Room 508, 130 East 22nd St., New York City.

This report is a most interesting record of work for the prevention of blindness. It is worthy a place on the desk of every physician.

THE SCIENCE PRESS has issued a number of books with the purpose of promoting scientific research.

Vol. II Medical Research and Education, by men associated with the leading universities and colleges in this country, is an intensely interesting and valuable book. It discusses practically every phase of medical education in this country and makes many valuable suggestions. This book should be in the library of every medical teacher.

(Continued on page xiv).

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THERAPEUTIC NOTES.

THE DELICATE SCHOOL GIRL.—Even the most robust and generally healthy children show the deleterious results of the modern system of educational “forcing” that prevails in most of our larger cities. The child that starts the school year in excellent physical condition, after the freedom and fresh air of the summer vacation, in many instances, becomes nervous, fidgety, and more or less anemic, as the term progresses, as the combined result of mental strain and physical confinement in overheated, poorly ventilated school rooms. How much more likely is such a result in the case of the delicate, highstrung, sensitively organized, adolescent girl? It is certainly a great mistake to allow such a girl to continue under high mental pressure, at the expense of her physical health and well being, and every available means should be resorted to to conserve the vitality and prevent a nervous breakdown. Regularity of meals, plenty of sleep, out-of-door exercise without fatigue, open windows at night and plenty of nutritious food, should all be supplied. Just as soon as an anemic pallor is noticeable, it is a good plan to order Pepto-Mangan (Gude) for a week or two, or as long as necessary to bring about an improvement in the blood state, and a restoration of color to the skin and visible mucous membranes. This efficient hematinic is especially serviceable in such cases, because it does not in the least interfere with the digestion nor induce a constipated habit.

ANNOUNCEMENT.—The next volume of the Case History Series will be De Normandie’s “Case Histories in Obstetrics,” an octavo of 460 pages by R. L. De Normandie, M. D. of Harvard and the Boston Lying-In Hospital. The book presents 71 case histories, classified in definite groups under section headings as follows: Section I, Diagnosis of Pregnancy. Section II, Miscarriage. Section III, Normal Pregnancy. Section IV, Forceps Delivery. Section V, Breech Presentation and Delivery, etc.

Each section is followed by a special chapter entitled “Summary.” We would call attention to this feature of the book, unique among the Case History volumes. Each summary is a careful consideration of the subject in hand upon the cases just considered.

The book is thus an orderly succession of clinics with deductive instruction from detailed consideration and comparison of conditions present in each group of cases.

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UTERO-OVARION NEUROSES.—The nervous attacks and minor attacks of pain which arise from functional disturbance in the utero-ovarian tract, furnish a splendid field for Pasadyne (Daniel) and show in a gratifying fashion the marked usefulness of this product in nervous attacks and even as a mild anodyne. A particularly valuable point about Pasadyne (Daniel) is its freedom from danger. As is well known Pasadyne (Daniel) is the distinctive name for a pure concentrated tincture of passiflora incarnata. A sample bottle may be had by addressing the laboratory of John B. Daniel, 34 Wall Street, Atlanta, Georgia.

SEXUAL NEUROSES.—Whilst it is true that in many instances a definitely existing lesion somewhere along the genito-urinary tract is the underlying cause of that distressing condition popularly described as sexual neurasthenia, yet in certain cases it is impossible of detection, or if detected its effects are too firmly fixed to make an immediately favorable response to the local treatment instituted. Wherefore the need for a soothing agent such as Bromidia (Battle) becomes necessary. Bromidia (Battle) is of the greatest service. It soothes the sexual irritability and enables the patient to rest and sleep well.

THE RECOVERY FROM LA GRIPPE.—Since the first appearance upon our shores of that unwelcome infectious disease known as La Grippe, the medical journals have been filled with articles advocating different methods of treating the attack itself and its various complications. But little attention, however, has been paid to the im-

portant question of how to best treat the convalescent subject. Among all the acute infections there is probably none that is as likely to leave the patient quite as thoroughly devitalized and generally prostrated, as does a sharp attack of La Grippe. For some reason the degree of prostration from grippal infection appears to be entirely out of proportion to the severity of the attack itself. This peculiarity renders it advisable and usually necessary to strengthen and support the general vitality of the patient during the period of convalescence. Complete rest, nourishing food, plenty of fresh air and stimulation according to indications are, of course, distinctly important measures. At the same time tonic and hematinic medication should not be neglected. Probably the most generally acceptable and efficient general tonic and hemic reconstituent for such patients is Pepto-Mangan (Gude), a bland, non-irritant and promptly absorbable combination of the organic peptonates of iron and manganese. This efficient blood-builder and reconstructive does not disturb digestion nor induce constipation, and is readily taken by patients of all ages.

CORPORA LUTEA NOW AVAILABLE.—Physicians who have been desirous of prescribing Corpora Lutea, but have been unable to do so through inability of their druggists to supply it, will be glad to know that the manufacturers, Messrs. Parke, Davis & Co., have taken steps to secure sufficient quantities of the glands in future to meet the probable demands of the medical profession.

As is known, perhaps, to most physicians, Corpora Lutea is largely used to control the symptoms following the removal of the ovaries, especially in young women, and to relieve the nervous disturbances attending the natural menopause. Reports have appeared on its successful employment in the treatment of amenorrhœa, dysmenorrhœa, chlorosis and menorrhœgia. It is supplied in desiccated form, in capsules of five grains each, equivalent to about thirty grains of fresh corpus luteum. Only the yellow granular material from fresh ovaries is used in its preparation, the remainder of the gland being discarded because of its lack of therapeutic value.

While comparatively a new product, there is sufficient evidence at hand to warrant the opinion of one writer who expresses the belief that "in Corpora Lutea we have a preparation that will be a blessing to womankind."



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(Continued from page 540).

The Assistant Surgeon General has issued through the Treasury Department of the United States Public Health Service a bulletin on COMMUNICABLE DISEASES. This gives an analysis of the laws and regulations in force in the United States for the control of these diseases.

The bulletin gives information of every kind and description on this subject together with court decisions in regard to quarantine laws and state regulations for the control of disease.

This work must be of the greatest service to Boards of Health and Health Officers and a source of valuable information to physicians generally.

PRACTICAL THERAPEUTICS.—By Hoyt. Price \$5.00. Published by the C. V. Mosby Company, Medical Publishers, St. Louis.

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A HISTORY OF LARYNGOLOGY AND RHINOLOGY.—By Jonathan Wright, M. D., Director of the Department of Laboratories, New York Post-Graduate Medical School and Hospital. Second Edition, Revised and Enlarged. Octavo, 357 pages, illustrated. Cloth, \$4.00, *net.* Lea & Febiger, Philadelphia and New York, 1914.

This book gives the history of work on this subject and is an interesting account of the development of knowledge in regard to the subject.

TREATMENT OF CHRONIC LEG ULCERS. A PRACTICAL GUIDE TO ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT.—By Dr. Edward Adams, 122 pages. Cloth, \$1.00. Published by The International Journal of Surgery Company, 100 William Street, New York City.

The author has succeeded in giving the various treatments of ulcer of the leg in a brief but satisfactory way. It furnishes a ready reference for differential diagnosis and treatment. The illustrations are good.

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The surgical section of the volume has papers on very interesting subjects, as Pyloric Stenosis in Infants, Intestinal Short Circuit, Treatment of Perforating Gastric or Duodenal Ulcer, and Treatment of Gall-Stones. These with many others make up a valuable volume.

INTERNATIONAL CLINICS, Vol. III. 24th Series.

Among the papers in this volume which are of especial interest are The Vaccine Treatment of Typhoid Fever, The Treatment of Pulmonary Tuberculosis, and the Treatment of Diabetes, The Treatment of Neuritis by Electricity, and an article on the Thyroid Gland with special reference to goitre, these with other articles make up a volume of practical information.

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A TEXT-BOOK OF THE DISEASES OF THE NOSE AND THROAT.—By Jonathan Wright, M. D., Director of the Department of the Laboratories, New York Post-Graduate Medical School and Hospital, and Harmon Smith, M. D., Surgeon to Throat Department of the Manhattan Eye, Ear, Nose and Throat Hospital; Clinical Professor of Laryngology and Rhinology, Cornell University Medical School. Octavo, 683 pages, with 313 engravings and 14 plates. Cloth, \$5.00, *net.* Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book is a treatise on Diseases of the Nose and Throat. Its arrangement is such as to appeal to the busy practitioner or the specialist who wishes to consult authors with little loss of time. The emphasis which is given to pathology and etiology of these diseases is a strong point. The book is well illustrated and makes a valuable addition to the literature on this subject.

LOCAL ANESTHESIA: ITS SCIENTIFIC BASIS AND PRACTICAL USE.—By Professor Dr. Heinrich Braun, Obermedizinalrat and Director of the Kgl. Hospital at Zwickau, Germany. Translated and edited by Percy Shields, M. D., A. C. S., Cincinnati, Ohio, from the third revised German edition. Octavo, 399 pages, with 215 illustrations in black and colors. Cloth, \$4.25, *net.* Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book is a careful discussion of the subject of local anesthesia. It takes up the various kinds of local anesthesia, the method of using, the scope of usefulness, dangers of administration, etc., etc. It is just the book for the physician or surgeon to secure information on this subject.

A MANUAL OF PRACTICAL HYGIENE.—For Students, Physicians and Health Officers. By Charles Harrington, M. D., late Professor of Hygiene in the Medical School of Harvard University. Fifth edition, revised and enlarged by Mark W. Richardson, M. D., Secretary to the State Board of Health of Massachusetts, in collaboration with the following officials connected with the Massachusetts State Board of Health: W. H. Clark, Chief Chemist; X. H. Goodnough, Chief Engineer; William C. Hanson, M. D., Assistant to the Secretary; Hermann C. Lythgoe, Chief Analyst of Food and Drug Department, and George H. Martin, formerly Secretary to the Massachusetts State Board of Education. Octavo, 933 pages, with 125 engravings and 24 plates in colors and monochrome. Cloth, \$5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

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PRIMARY CANCER OF THE LUNG. . .

In a second communication (see *Journal A. M. A.*, July 20, 1912, p. 181), B. M. Edlavitch, Fort Wayne, Ind. (*Journal A. M. A.*, Oct. 17, 1914), reviews the recent literature of the subject and concludes that carcinoma originating in the lung or bronchi is relatively not infrequent as might be expected in an organ so rich in epithelial elements. He reports a case from the private practice of Dr. G. W. McCaskey in a woman aged sixty-four. She had caught cold a year before she was seen and had since been troubled with a persistent cough, occasionally with slight hemorrhages. There was considerable expectoration and sputum and later much dyspnea. She reported that she had had no pain, night sweats or fever but she had lost fifty pounds in weight and was decidedly puffy in the face and the right arm was swollen. A hard swelling, the contour of which could not be deter-

mined, was felt behind the clavicle and characteristic board-like dulness was obtained on percussion over the upper half of the right lung both in front and behind. The sputum examination was negative. She died January 3, 1914, and the necropsy showed a squamous-cell carcinoma originating from the bronchial mucosa. Edlavitch reviews the symptoms which seem to be constant in many of these cases: Dyspnea, cough, pain, weakness and loss of weight and pressure effects on adjacent parts and organs. The most typical of the physical signs is the board-like hard percussion note. Obviously in cases where tubercle bacilli are found coexisting the diagnosis is more difficult. Roentgenoscopy, bronchoscopy thoracotomy are, of course, aids to diagnosis. The only hope in such a condition is early recognition and extirpation of the disease though active radioemanations may be of therapeutic value whether surgery is employed or not. Lung resection is admittedly a rather difficult operation but if possible it should be tried.

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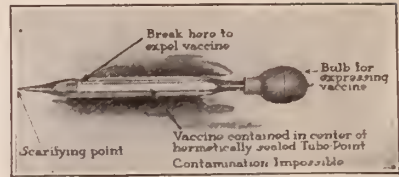
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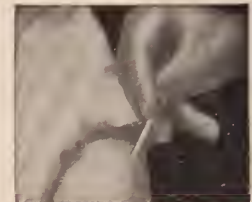
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LUPUS VULGARIS.

M. L. Heidingsfeld, Cincinnati (*Journal A. M. A.*, Oct. 17, 1914), refers to an earlier article giving his experience with trichloroacetic acid in concentrated form and in which he mentioned that he had seen good effects from it in cases of lupus vulgaris. Some years now of further trial have led him to believe that it is far superior to any lupus treatment before used by him and equal in results to the Finsen method. The cosmetic results compare most favorably with those from the Finsen treatment and are better than those of radium, Roentgen ray and mesothorium treatment. It is far superior to most of the other methods in its ready adaptability and inexpensiveness. The pain and discomfort is momentary and transient, only a slight sense of burning and stinging. A saturated solution of trichloroacetic acid is obtained by adding 10 drops of distilled water to an ounce of pure crystals. A tiny pledget of cotton is carefully wrapped around the end of a rounded toothpick by means of which the remedy is applied as far as practicable to each congested nodule. It should be applied to areas not much larger than a quarter of a dollar at a time and repeated at seven to fourteen day intervals. He gives a prescription to relieve the temporary stinging, consisting of one part each of sulphurated potash and zinc sulphate, ten parts of zinc oxid, fifteen parts of lime water and distilled water enough to make forty parts, with enough carmin added to color the solution pink. In addition to its protective and healing properties this application serves as a cosmetic

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EPILEPSY.

Two cases of epilepsy associated with skin manifestations of tuberous sclerosis are reported by N. S. Yawger, Philadelphia (*Journal A. M. A.*, Oct. 17, 1914). Both were in young females for foreign extraction. He also noticed some unusual factors in the etiology of epilepsy; one case due to exposure to cold and another in which there must have been some actual destruction of cerebral tissue by contact with an alternating street current which rendered the patient temporarily unconscious and hemiparetic. He quotes other cases, one of Oppenheim's in which epilepsy followed long continued ingestion of roasted coffee beans, from 1 to 1 $\frac{1}{3}$ ounces a day. Another was caused by a sudden falling of bright light on the eye. Spontaneous recovery rarely occurs in this disease but he mentions a case of eleven years' duration in which epilepsy was replaced by a paraplegia which has now lasted eleven years with no further epileptic attacks. Yawger discusses the relation between sleep and epilepsy which is noticeable in the postepileptic somnolence of most epileptics and the occurrence of attacks only in sleep in many others. Two cases of so-called non-epileptic absences in patients are described and he thinks that they are best classified as momentary psychic attacks of epilepsy.



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Vermont Medical Monthly.

VOL. XX.

DECEMBER 15, 1914.

NUMBER 12

ORIGINAL ARTICLES.

THE PREPARATION AND AFTER TREATMENT OF SURGICAL CASES.*

BY

G. W. SHERWOOD, M. D.

Every line of medicine and surgery has changed more or less the past ten years. One of the greatest evolutions is the change in the care of surgical cases, especially in the consideration given to the psychic state. For this much, credit is due to Dr. Geo. Crile. Fear is a great factor to be considered. Nervous tension must be controlled, and if possible the physician should be ensured of a state of tranquility, confidence in surgeon and nurses, and a general spirit of hopefulness.

Dr. Crile in speaking of the psychic state speaks thus:

"There is an interesting fact concerning the psychic state of a patient at the time of the operation. If the patient is in grave doubt as to whether or not he can survive the operation; if he lacks confidence in the hospital or in the surgeon, the patient has what in psychology is known as a low threshold, and if he goes under the anesthetic in this state, the effect of any physical injury will be augmented, and throughout the entire anesthesia there is manifested the evidence of fear in the respiration and the pulse, and in the way in which he reacts to the anesthetic and the trauma of operation. These patients take the operation poorly. It is as though the patient went under the operation with his motor set at high speed, so that the energy of the body is consumed more rapidly, and hence the exhaustion or shock is increased."

There has been a great change in the external preparation of patients which has much to do

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with the lessened nervous strain. We all can recall vividly the picture of an ordinary hospital preparation of ten years ago.

Preparation for an abdominal operation of ten years ago.

Bath, *day before operation.*

Vaginal douche—bichloride 1-5000.

Shave and scrub with soap and water for 10 min.

Permanganate sol. and oxalic acid for 3 min.

Bichloride, 1-2000 for 5 min.

Sterile water for 1 minute.

Apply either bichloride or dry sterile compress and binder.

Day of operation:

Vaginal douche—bichloride, 1-5000.

Scrub with soap and water, 5 min.

Bichloride, 1-2000 for 5 min.

Wash off with

Alcohol, 95%, 2 min.

Ether, 1 min.

Sterile water, 5 min.

Apply dry sterile compress and binder.

Preparation on table:

Scrub with soap and water.

Bichloride, tr. green.

Alcohol.

Ether or Harrington's solution.

Today a thorough shaving and scrubbing of abdomen for a laparotomy followed with thorough painting surface with tr. of iodine forms a very effective preparation, and the percent of stitch abscesses is less with the latter than the former.

The difference in the effect on the patient of the two preparations is most marked. Today we rarely see a patient unduly excited or in terror. They seem very matter of fact.

Everything disagreeable should be kept from them. A restful sleep the night before ensured with bromides, veronal or a hypo render them in good nerve. Allow no preparation to interfere with their rest.

I recall well, the ward of convalescents surrounding a new patient to be operated upon.

The faces of the "have been" were eager with suppressed information. They could not talk fast enough of the things which were done, were removed, and etc., with all the weird and exaggerated impressions which imagination and ignorance can conjure up. No wonder the new patient could not sleep. Salts at 2 A. M. and H. H. S. enema at daybreak, black coffee at 6, and a nurse with a formidable scrubbing tray at 7 A. M.

The patient was only a factor in the huge machinery of asepsis and hospital routine. It is going to take some time to eradicate the dire results of that lack of study of the individual. There is a great opportunity for physicians to impress upon their patients the harm which may come from this indiscriminate talking of their operations or in fact of any illness, especially neurasthenics—the harm not only fixing in their own mind things which should be forgotten, but the effect produced on the listener.

We have to bow to the Christian Scientists who do not allow their adherents to talk of illness. That in itself is a great thing. Human nature craves sympathy. The patient had had the center of the stage—the chief consideration—and he lives it over—the impressions, feelings, experiences. I recall one, who can not be with a group of women half an hour before she has told how near she came to dying six years ago when operated upon—with variations and additions which time and imagination are bound to add. It is the great event of her life.

These things may be more than harmful to some listener. It is up to the physician to try to correct that state of mind, and time and effort will do it.

In the short time in which I have been connected with surgical cases, there is a great difference in the general attitude towards surgery. They do not feel it necessary to provide for the funeral. One old woman on waking up from the ether, said, "Am I really alive?" On being assured that she was, "Tell Sary, she needn't bring that valise on my bed." Later, I found out that the valise contained her burial clothes.

People have more confidence in surgery. They feel the spirit that makes medicine work hand in hand with surgery. They feel the mental strain less. The great fear is of the ether. The giving up the hold on one's self as it were. This is greatly helped by the preliminary hypo of morphin and atropin, which as a routine is

preferable to H. M. C., as the former does not blind the cardinal symptoms for the anesthetist.

It is very difficult to measure nerve strain, especially in impressionable people, and the safest way is to dull the perceptions of all. I recall a letter written to me by a senior in a Girls' College, showing the writer to be on the verge of nervous collapse. She said on rising to recite, the same weak, fading, sinking feeling came over her that she had had on being etherized a year before for a simple dilatation and curettage. So that she often was obliged to give up trying to recite. On looking up her history, I found no hypo was given—she seemed so calm and undisturbed. I wonder if it had been given and the recollection of her sensation had been less keen, if there might not have been a less distressing symptom of the nerve exhaustion.

The first indication in the internal preparation of a patient is to clean the intestinal tract. The drug which does this best is calomel, grs 11ss. This not only cleanses, but stimulates the kidneys and all glandular activity, and lessens the toxemia which is bound to come on if the intestinal contents undergo fermentation and putrefaction with the formation of gas. If there is not time, in the preparation, for calomel—a thorough enema and calomel given as soon as the patient can swallow, will accomplish the same result.

The first and most alarming post-operative condition is that of shock. There are two great causative factors—extent of injury and loss of blood. There is no direct proportion to the consequent manifestations in a given case. The variations belong to the mysterious problem called life. Severe trauma is more apt to cause shock than loss of blood. It is stated that Dr. Crile has produced death in a dog by manipulations of intestines for a few hours and then closing the abdomen.

Shock means

Loss of sensibilities,

Pallor of the mucous membranes,

Small, weak pulse,

Irregular, rapid and shallow respirations.

Low blood-pressure.

The most remarkable theory of the cause of shock is that there is an exhaustion or inhibition of the vaso-motor mechanism. By over stimulating of sensory nerves the vaso-motor center is exhausted. The vaso-constrictor power is lost, the arteries and capillaries are emptied of

blood and blood accumulates in the veins. The blood-pressure is lowered. The heart action is impaired, respiration impeded and the venous blood accumulates in the veins of the splanchnic area.

A recent article states that trauma and exposure to air of the abdominal viscera is the surest way to produce shock. The resulting condition is not only due to vaso-motor paralysis, but to the great loss of cells and fluid from the blood through stasis, diapedesis and exudation, occurring as a reaction of the great peritoneal surface—to exposure to air.

This explains why hemorrhage so nearly resembles shock, and favors its occurrence. It lies with the operator to avoid irritation of intra-abdominal tissues and hemorrhage, and to replace as soon as possible blood losses. Every laparotomy should be followed with a high enema of saline solution. This stimulates the heart and replaces fluids. If there is any *shock*, add brandy and coffee to the enema. Increase heat—hot water bottles—keep in mind the necessity to conserve heat of the body. Aid circulation by gravity—raise head of bed and heart stimulants, strychnine, digitalis. Strychnine is a stimulant to the nervous system. There is a slow, feeble pulse, pallor, pores of skin are relaxed, skin is clammy. The indication is to raise the blood-pressure by increasing peripheral resistance. This is done by two drugs, adrenalin, atropin. Mechanically this may be produced by pressure—bandaging the extremities.

The greatest medicinal agent is adrenalin MN hypo q_i, or 2 h. watching pulse and respiration, and its special indication is pallor with moist, clammy skin. Atropin relieves the vaso-centers and produces free circulation of blood.

The other medicines for stimulation are used supplementary, and morphine gives excellent results in these cases both as a stimulant and sedative. Transfusion infusion and hypodermoclysis are indicated only in extreme cases.

Three words—*pain, thirst and vomiting*, sum up the general malaise of postoperative cases. Thirst is one of the distressing symptoms. It is in proportion to the amount of blood lost, and the amount of fluids expelled with vomitus.

Opiates increase thirst and atropin should not be added in an ordinary case except where given preliminary to operation for its effect on respiratory tract.

The indication is to supply fluids into the circulation. If fluids taken into the stomach provoke vomiting, copious colic lavage with normal salt solution gives great relief. Salt is added to prevent the extraction of inorganic salts from the lining of the intestine. If water alone is used the cells give up their coloring matter and the inorganics are taken up in solution and these inorganic salts are essential to metabolism.

The lips should be moistened freely and if the vomitus is very acid, soda bicarbonate solution may be used to rinse the mouth swallowing a little.

If thirst and restlessness are extreme and not relieved by these measures, morphia may be given—one large dose hypo— $\frac{1}{4}$ grain is ordinarily sufficient. This will induce sleep and give opportunity for the replacement of fluids lost.

The repeated administration of small doses is a procrastination—codein rarely gives satisfactory results. In using morphia one should keep in mind that the secretion of urine is diminished and catheterization need not be done for 8 to 10 hours. The sense of bladder fullness is dulled and the condition must be watched.

Do not give morphia for thirst and restlessness unless a high saline be given previously.

The character of the pain, its degree and persistence varies with the kind of operation, the nervous state of the patient, and the amount of tension on the sutures and the injury to the tissues.

Routine treatment calls for morphine $\frac{1}{4}$ every 2 to 4 hours till pain is relieved. Then only when indicated. A very important point is the fact that pain may be eased by changing the position of the patient, raising the head, and placing a pillow under knees relieves tension. Patient may also be turned from side to side supported with pillows.

As soon as the patient calls for water, give him a glass of water. This returns washing out the stomach. If vomiting persists, then simply wet the lips, give sups of hot water and as soon as bowels are opened, nausea will be relieved.

There is much less nausea and vomiting with the present method of giving ether. In fact, it is unusual for the patient to vomit after the first thorough cleansing of the stomach with the glass of water. The feeding of these patients depends on conditions. When vomiting stops, albumen water, broth, milk, may be given, les-

sening the burden of digestion as much as possible. Fever is apt to come from exaggerated metabolism in the effort the body makes to repair. This becomes normal 3rd or 4th day—then light diet gradually increased to regular diet. If nausea and vomiting persist beyond 48 hours, rectal feedings must be resorted to. The basis of these nutrient enemas is peptonized milk with a variety of formulas—precede each nutrient enema with a cleansing enema.

After shock, pain, thirst and vomiting, the next outlook is for intestinal paresis. This comes only in those cases where there has been,

1. Great pressure, as from tumor,
2. Where intestines are handled roughly,
3. An infection from some source.

No rule can be laid down for the after care of surgical cases. With each class of cases, one has to meet the indications.

A good general rule is that the sooner the bowels are opened, the more comfortable the patient will be except in those cases where early peristalsis is contraindicated as in operations upon the intestines. One must also remember that one of Nature's laws is rest and inaction after injury.

A clean appendectomy at the end of 24 hours can have a S. S. enema. Keep the patient comfortable from gas pains by enemas whenever necessary. The third day a thorough catharsis and convalescence will be uneventful.

However, where from the above conditions, intestinal paresis may be expected, eserine $\frac{1}{50}$ gr. hypo every 8 hours beginning as soon as patient is in bed. At the end of 24 hours an enema.

Calomel, grs. 11 ss. in divided doses as soon as patient can swallow. The enemas may be repeated as often as indicated by abdominal distension and gas pains, varying them from time to time. The first ones have to be syphoned back. Later, there is more power in expelling and finally the paresis is under control and the crisis is past.

Various enemas are,

- ℞ Glycerine ʒi
- Spts. Turpentine ʒiv
- Soap Suds 1 pint
- ℞ Castor Oil ʒi
- Glycerine ʒi
- Turpentine ʒss
- Mag. Sulf. ʒii
- Soap Suds 1 pint

- ℞ Molasses $\frac{1}{2}$ pint
- Milk 1 pint
- ℞ Soda Bicarb ʒii
- Nacl ʒii
- Ess. Peppermint ʒss
- Water 1 pint
- ℞ Ox-gall ʒss
- Turpentine ʒss
- Warm Water 1 pint
- ℞ Ox-gall ʒss
- Warm Water 1 pint

A paresis which has not yielded the 3rd and 4th day presents an alarming condition—persistent vomiting—greenish, black fluid, contents of small intestine regurgitated into stomach. Great discomfort, with fullness and pain from the extreme distension, dyspnea, small, rapid pulse at 120 to 160. There is a similarity between intestinal paralysis, intestinal obstruction, and beginning peritonitis which one always keeps in mind. In peritonitis, however, there is not the complete absence of bowel movements as seen in the other two conditions, and withal, there is the persistent vomiting, steady rise in temperature and pulse, and lastly fecal vomiting which give a gloomy prognosis.

Pituitrin ought to help out in these cases from its character as a stimulant to *non striated* muscle (with the exception of the heart muscle). Personally, I have had no opportunity to try it in one of these cases yet.

REMOTE CONDITIONS.

Under this heading may be placed a few of the more common ones. *Stitch abscess* which may come from tenth day to third week.

Phlebites, occurring usually in left groin at end of third week.

Continual pain, this is often from intestinal indigestion with gas formation, and resulting painful intestinal peristalsis. A patient has more or less soreness, especially after pelvic operations until the hyperemia of the healing tissues has disappeared, and the new connective tissues is strong.

A large percent of gynecological patients are neuralgic and neurasthenic. There is a tendency for these cases to slump. They expect a miracle and finding the pains and aches still there, they become disappointed and disheartened. They are a little better, but not well at once as was expected.

A patient who, at one time was more or less an invalid, gave me a good prescription which I will pass on to you.

"I find," she said "that to always say 'I am better,' saves a lot of talking about myself and so I continued to say I am better, thank you, and by and by I found myself saying I am fine."

A mental attitude like that—with a general common-sense regime of nutritious foods—sensible dress and good air with whatever general medication is indicated will save a large per cent of post operative neurotics.

A REVIEW OF PYLORIC STENOSIS IN INFANCY WITH A REPORT OF CASES.

BY

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In presenting this paper I fully realize that the literature on this subject for the past few months has been very abundant, but the fact that so many of these cases are now being reported undoubtedly means that we are more on the lookout for them and are rightly diagnosing them more often rather than that the condition is more prevalent than in the past.

I have recently treated four of these cases and a report of these with a view of recent points in diagnosis may be of interest. Dr. Beardsley was the first to describe these cases. Later cases were reported by Landeres in 1879, Maier in 1885, Hirschsprung in 1887, since then the case reports have constantly increased. The majority of the cases reported are breast fed infants, the male children being more commonly affected. In Holt's series of 56 cases, 40 were entirely breast fed, 12 had mixed feedings and only 4 were entirely bottle fed. There were but 6 female infants in this series.

In Downes' series of 21 infants, 16 were males, 17 were entirely breast fed, 3 mixed feeding, 1 bottle fed.

Etiology: The etiological factors are uncertain. Faulty embryonic development has been cited as a causative factor.

Thomson believes that the condition originates during intra-uterine life and is due to the ingestion of liquor amnii, this by irritating the stomach mucous membrane excites both stomach

and pylorus to excessive activity.

Another theory has been that there is congenitally a narrowing of the pylorus which however, is not sufficient to obstruct the passage of food. These infants are in apparent health at birth but later the spasm makes its appearance, due to increased stomach acidity. Hess, however, has reported cases in which there was no increased acidity.

Pathology: In the hypertrophic type. There is hypertrophy of the circular muscle fibers of the pylorus, this the universal report of the pathologist.

Symptoms: This condition is generally spoken of as a congenital stenosis, but the symptoms are exceptionally seen at birth or during the first week of life.

Holt sights cases of forceful vomiting, beginning on the day of birth but none of these cases proved to be stenosis. He thinks that the occurrence of symptoms this early would be against the presence of obstruction.

The majority of these cases seem normal for the first week of life, some at late as the sixth week, when vomiting occurs, this becomes persistent and projectile in type, occurring at irregular intervals, sometimes after each feeding. At times the infant will reject more than he has taken. This is explained to be gradual dilatation of the stomach with food retention, the remains of one or more previous feedings being vomited at one time.

There is a stationary weight, or more often a steady emaciation

The urine is scanty. The stools may be small but well digested or they may be nearly an absence of stools.

A thickening about the pylorus may be palpated, especially if an anaesthetic is used, but this tumor formation is not always present, many of the cases being due to spasm.

When tumor is present it is not always possible to palpate it. Later we have a sunken abdomen in contrast to a distended stomach area. After nursing there may be evidence of pain.

On close inspection of the abdomen after feeding we may find peristaltic waves beginning under the left costal border and passing across the stomach towards the pylorus. Some authors describe a reverse peristalsis just previous to vomiting. There has been much said about the classification of this condition. It being quite gen-

FEEDING HOURS

Feed chart case 3.

6

9

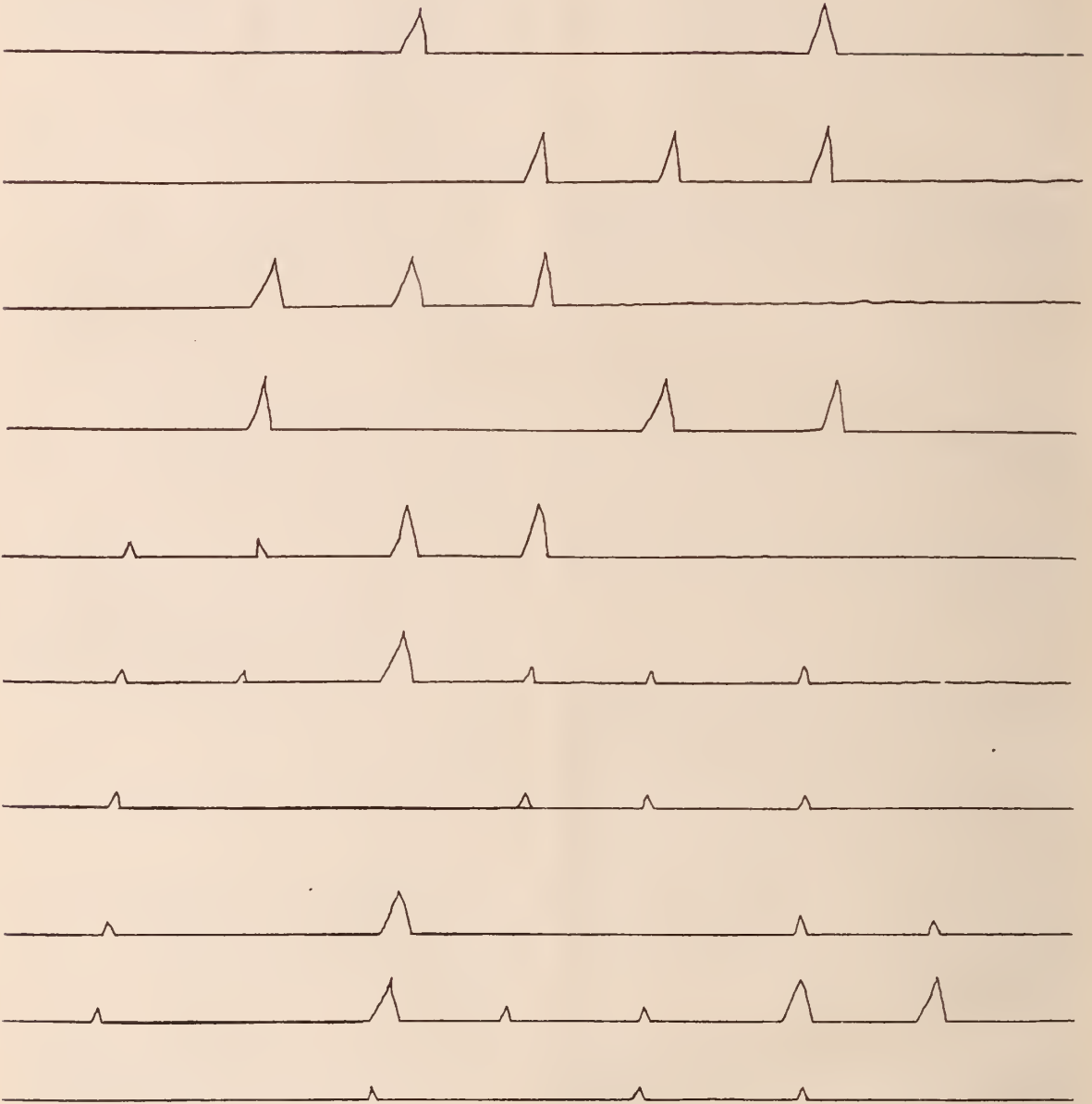
12

3

6

9

2



PROJECTILE VOMITING



REGURGITATION

erally considered as the spasmodic or the hypertrophic type of stenosis.

Holt in a recent article gives the opinion that these cases should be divided into the mild and severe, he believing that the spasmodic and the hypertrophic element are present in every case, sometimes one and sometimes the other predominating, and that the difference in cases is one of degree rather than a difference in type.

Koplik gives the following classification:

1. Pure spasm without a palpable tumor mass, but with expulsive vomiting, visible peristalsis and a marked loss in weight.

2. Pylorospasm accompanied by a relative stenosis.

3. Typical hypertrophic stenosis.

In many cases where the spasmodic element predominates the symptoms gradually lessen and the infant slowly regains its lost weight, this often requiring several weeks or months.

Singultus is spoken of as a frequent symptom and spasms at points other than the pylorus are not uncommon, as cardiospasm, pharyngo-spasm, or laryngo-spasm.

Diagnosis: An early diagnosis is very important, especially as to whether the case is one for medical or surgical treatment. The condition, however, is often not detected during the early symptoms.

An apparently healthy infant takes the breast normally for a few days or weeks, then begins to vomit after nursing, the usual line of treatment fails to give relief, the vomiting becoming persistent and projectile in type, the food at times being shot out three or four feet, there is no fever, visible peristalsis is often seen soon after nursing, the stools may vary from quite normal to scanty or in the hypertrophic type there may be almost an absence of stools. The palpation of the tumor is valuable, but the failure to palpate it must not be taken as conclusive evidence of its non-existence. The X-Ray has been quite generally used to ascertain the amount of obstruction, with reference to the emptying time of the stomach, and is of much value.

Another simple method is to feed the infant a measured quantity of food that will not form a curd in the stomach, as boiled milk, or milk to which sufficient alkali has been added, and at the end of three hours the stomach is emptied by aspiration. This is easily done with the little apparatus suggested by Hess.

This method is valuable as a diagnostic aid and may be used at intervals during treatment to ascertain the amount of progress made.

Hess has used his duodenal catheter as a diagnostic aid in these cases and has also done considerable original work with normal infants in estimating the diameter of the pyloric opening in the new born, and in infants a few weeks of age. He estimates the diameter in the new born at 4.75 mm., and at two to three months at 6 mm.

Treatment: There seems to be no definite understanding as to when these cases should become surgical, the opinion of different writers differing greatly.

Series of cases treated medically with good results have been reported, the surgeons have published equally good reports.

Richter recently reported 22 operations with 3 deaths.

Scudder 17 cases with 4 deaths.

Downes 22 cases with 7 deaths.

Many of these cases were received late.

Of the series treated medically I might mention that of Hutchinson 22 cases with 4 deaths. Those of Strauch, Ibrahim and others, Holt calls attention to the fact that there are medical as well as surgical risks.

The operation of posterior gastro-enterostomy seems to continue the most popular, but the operation of Ramstead has been much discussed and undoubtedly is applicable to some cases.

I think that every case should be carefully studied using all the diagnostic methods at our command that we may decide which method of treatment offers the better chance for the infant.

Case 1. Male, the second child of healthy parents, labor normal and the infant reported normal at birth. Birth weight 8 pounds. He was put to the breast on the third day and nursed well, he began vomiting however, before the end of the first week, this persisted in spite of treatment and he cried much of the time, the weight remaining stationary. The breast milk was not examined but was considered at fault and the infant was weaned at 6 weeks, being given a proprietary food with the addition of cow's milk.

The vomiting did not lessen. This infant came under my care when 8½ weeks of age, his weight was 7 pounds thirteen ounces, he was quite emaciated and cried continually. After

nursing, peristaltic waves over the stomach were readily observed, at times these were marked and immediately followed by projectile vomiting. I was unable to detect any reverse peristaltic action. The stools were well digested but scanty.

There were occasional attacks of laryngospasm.

I was unable to palpate any tumor.

The vomiting not being constant, I believed that this was a case of spasmyloric.

He was placed on a weak, whole milk dilution and fed at three hour intervals, this was peptinized ten minutes.

Bromide was given in small doses.

The vomiting soon lessened and the quantity of the food was gradually increased, the stools were good, and at the end of three weeks treatment the vomiting had stopped, the weight was increasing and the time of peptinizing was gradually reduced. This infant is now 12½ months old, weighs 23 pounds, walks and is in excellent physical condition.

Case 2. I saw this infant first in consultation on May 18, 1914. When it was 13 months old, the following history was obtained. The first child of healthy parents, birth normal and the infant apparently normal, birth weight about 8 pounds, she was breast fed for a few weeks but began vomiting soon after birth, not at every feeding but some each day, at times this was projectal. Thinking the breast milk did not agree she was weaned and given a proprietary food, but the vomiting persisted so she had been changed from one food to another without benefit. When seen she was on a proprietary food without the addition of fresh milk receiving 4 ounces at two hour intervals. The vomiting was as bad as ever, and after feeding I readily observed peristaltic waves over the stomach. I was unable to palpate any tumor at the pyloric region. She was markedly emaciated and pale, the skin was inelastic, the features pinched and the stomach area distended.

X-Ray showed a dilated stomach, some of the bismuth feeding however, readily passed the pylorus. While giving the bismuth feeding by gavage long ropes of mucous came out with the tube.

She was given one quart of milk from which the top four ounces had been taken after standing four hours. This was divided into seven feedings of 4 ounces each with citrate of soda, 2 grains to the ounce.

Lavage was ordered twice daily before feeding.

The attending physician reported one week later that the infant had vomited but twice and seemed hungry. The lavage was reduced to once a day, the milk increased to 30 ounces with 2/3 ounce of dextri-maltose added. The second X-Ray was taken on June 15, 1914.

Her weight on May 18th was 11 lbs. 12 oz., the 26th 12 lbs. 4 oz., June 2nd 12 lbs. 7 oz., the 9th 12 lbs. 14 oz. Since this she has gained one pound only in the last three months, the vomiting is controlled if the stomach is washed daily, there is a considerable quantity of mucus, and if the lavage is done as early as three hours after feeding considerable residue is found showing delayed emptying of the stomach. I have advised a posterior gastro-enterostomy in this case, thinking it the most promising procedure.

Case 3. Male, birth normal, and the infant in excellent general condition, weighing about 8 pounds. He was bottle fed from the first and did well until one month old when he began vomiting. This soon became projectile in type part of the time.

X-Ray showed that apparently very little food passed the pylorus.

The stools were good but scanty. No tumor could be palpated.

The infant was given modified milk with a low fat content, dextrin and maltose being used.

Citrate of soda, two grains to the ounce was added and lavage ordered twice a day.

The results were marked as the vomiting chart shows. After the first marked loss of weight the infant began to gain, the stools were good, and there was no vomiting. Then during the extremely hot week in July the bowels became upset, a rapid loss in weight ensued, a death occurring within a few days. No autopsy was allowed.

Case 4. Male, birth weight 8 pounds, breast fed for five days then modified milk as the breast milk failed. Vomiting began during the first week and continued in spite of several food changes. The vomiting was projectile at times, stools good but scanty. No tumor was palpable.

This infant was treated the same as 2nd and 3rd, and now at 8½ months weighs 15 pounds.

"Cases of pulmonary tuberculosis are now being treated at the Vermont Sanatorium by the artificial pneumothorax method. Where the

lesion appears to be of an ulcerative type on one side only and the other side seems to be in fairly good condition, the lung on the worse side is collapsed by the injection of a gas into the pleural cavity. By experiment it has been found that nitrogen gas is not absorbed as readily as other gases and it has been universally adopted by the users of this method. The greatest obstacle to the introduction of the gas is found in cases where there has been considerable pleurisy. In about one third of the cases tried, pleural adhesions have prevented the finding of a free space. No effort is made to introduce gas unless a free space is found as indicated by a water manometer. This manometer records the negative pressure existing within the thorax. When the needle has been introduced and the manometer indicates that the pressure is negative instead of positive, nitrogen gas is slowly introduced until the pressure is almost positive. Dr. Arthur N. Packard, of Saranac Lake, gave a demonstration at the Sanatorium on September 10, in the presence of the local examiners for the Sanatorium. In one case no trouble was experienced in finding a free space in the pleural cavity, and the lung was easily collapsed. In the second, however, a free space could not be found on the first trial, but later on it was demonstrated, and a small amount of gas was introduced.

The first injection of nitrogen is rather quickly absorbed so that it is necessary to inject on the third or fourth day following. These injections are made at intervals of about one week over a period of two months and then the interval is gradually lengthened. This method of treatment for unilateral cases is extensively used now and the weight of evidence is largely in favor of it. It does not seem to be indicated where there is active congestion or in cases where there is active involvement on the opposite side. It is, however, used in hemorrhage cases which do not yield to other methods regardless of the amount of activity and with fair results.

The following examiners were at Pittsford for the demonstration:

Dr. W. N. Bryant, Ludlow; Dr. C. S. Caverly, Rutland; Dr. W. F. Hazelton, Bellows Falls; Dr. J. N. Jenne, Burlington; Dr. S. S. Eddy, Middlebury; Dr. L. H. Ross, Bennington; Dr. Archibald J. Valleau, Morrisville; Dr. F. T. Kidder, Woodstock."

PSYCHOANALYSIS IN MEDICAL PRACTICE.

BY

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The following incident illustrates the power of early impressions, and to what extent they influence later life.

A Vermont farmer who had acquired a large property and a fine paying farm, which he hoped his boys would inherit and carry on into the future was plunged into the deepest grief, when his sons went away to sea. They had expressed a desire to take up sea-faring life. This both parents opposed in a very quiet way, when suddenly one of them disappeared and shipped on a New Bedford bark. He wrote his parents before he left for sea.

A couple of months later the other son ran away in the same manner and started as a common sailor. A year or so later they returned home, but no persuasions or inducements, could prevent them from going back to sea life.

Three years afterwards one of them became master of a vessel and the other had an advanced position. The disappointment of the farmer brought on invalidism, and incapacity to continue his work, and while he rejoiced that his sons should have advanced in their sea career, he could not understand why they had become so infatuated with sea life.

On the walls of the parlor were two pictures of ships, full rigged, and under full sail, with the blue waves around the bow. They were common lithographs that had come into the family from some peddler, and those pictures had idealized the future for those boys. All unconsciously to the parents, they had impressed on their imaginations the great new world which they longed to enter upon. Probably they read stories of sea life, but certainly they did not culminate all in a brief time. It was the work of months and years, that grew and at last developed.

This was the secret of their change, and this was the influence that fashioned all their future. This psychoanalysis shows causes of unknown and unrecognized great power afterwards.

A second example was that of a man who lead a very exemplary life and acquired a fortune. He lived abstemiously and carefully, until,

suddenly, when about 50 years of age, he began to drink wine, give champagne dinners, joined the clubs and was the most boisterous, hilarious member. This continued for a few years, when he died suddenly.

Analysis of his early history showed that both parents died when he was a year old. He was taken by a distant relative, who was a restaurant and saloon keeper. He was precautious, and able to sing some little ditties and when the roistering diners wanted a novelty, he was put on the table and made to sing his little songs. For two years or more he was frequently called on to entertain drinking revelers, and here he received a permanent impression that hilarity, joy and good feeling followed from the use of wines and spirits. Probably they may have given him some at this time, but the amount must have been small. At all events, when five years of age, his guardian died and he was brought up in a very quiet family and very early he was taught the dangers of alcohol, and became strongly opposed to the use of it.

All his early and business life up to 50 he was strictly temperate and was opposed to all use of spirits. Then suddenly some revolution took place in his brain, and the old psychological impressions came to the surface in an intense desire for exhilaration from wine. This was another case where psychoanalysis showed the impressions of the first few years of his life, breaking out after years of suppression.

Another example was that of a most exemplary woman, a widow, who developed the most secretive kleptomaniac impulses, taking advantage, and purloining things that could be of no possible benefit to her and secreting them in the most adroit way.

She emphatically denied all participation and even when confronted with the evidence of guilt, persisted in explaining it away in a most insane manner. Here again a study of her early life brought out an experience which evidently had been most impressive. When a young girl, ten or twelve years old, she became a companion to a relative who was a kleptomaniac, and her duty was to accompany this woman and note what she secreted about her person and how she did it. Sometimes she could prevent her from doing it. At other times she reported very accurately what had been taken, and where it had been placed. At that time she realized the crim-

inal character of this, and seemed to show great aversion.

A year or two later she went away to school, and this experience was apparently forgotten. Here was another early impression that broke out in later life, in the same thing. The consciousness of the act and its culpability was lost, but the weakened brain took a certain pleasure in repeating what she had seen in her relative many years before.

Another example, not so well defined, but evidently due to early impressions, was that of a prominent politician, who for the last ten years had drunk a great deal and was considered an invalid. Wherever he went an incendiary fire occurred, principally in old buildings. These were traced to him. He seemed not to be conscious of what he had done and was finally placed in an insane asylum. The early history showed that his father, a farmer, had for many years an obsession to burn up everything that was unsightly, and would go over to his neighbors and assist in putting fires to old stumps of trees and rubbish, and fences that were broken down. He was suspected of incendiarism, but it was never proven.

His favorite son went with him and assisted in all these efforts to clean up and burn up all the rubbish and objects that were worthless. His father died suddenly and he was sent to college, and was in no way different from other boys, and as a lawyer and politician was a very sensible, reasonable man.

From failures in political life, he began to drink, and later this peculiar obsession broke out, but it was concealed in the most adroit manner.

He was placed in an insane asylum and a few months later discharged as restored. He is now living on a farm very quietly, but shows the same extraordinary desire to burn things that are unsightly and in the way.

Another example which I think can be duplicated in the experience of others was that of a very prominent physician. He was a man of excellent habits, and in excellent health, and of superior judgment on all matters pertaining to himself and business. One day while in health, he went to bed, saying he was going to die. Two medical friends examined him carefully and found nothing except slow heart action. They laughed at him. To one he confided the fact

that for three generations the male members of his family had died at the beginning of 65 years of age, and he had come to that point, and he knew he would die. They tried to break up the delusion. Within twenty-four hours acute pneumonia set in and in 36 hours he was dead.

Later it was found that in a study of heredity which he had made some years before, he dwelt on the fact that certain races could not pass beyond a certain mark, that there was some inherent power which brought on cessation of heart's action, and death. He had no doubt studied his ancestors both direct and collateral, who had died at or about that time, and irrespective of the cause of disease had concluded that he could not be an exception to the rule.

Here was a species of veritable obsession which culminated fatally. There was in this an explanation from psychoanalysis, which could not be obtained otherwise. I think it is within the observation of all active physicians, that strange and abnormal acts and sometimes illness are traceable to causes and influences which have impressed the organism long before. Every now and then some patient will exhibit a most remarkable set of symptoms which could not possibly have been anticipated, both mental and physical. A careful study of the previous history of occupation, nutrition and even early influences in infancy will furnish unmistakable traces of its origin.

In the study of the drink and drug neurotic these instances are quite common. The drink and drug craze breaking out under the most unusual circumstances is traceable to some distinct physical conditions that have been accumulating through all the years. Students of syphilis and its entailments are very positive in their conviction that an early attack of this disease predisposes the system to a great variety of obscure diseases which may break out at any time, under any conditions, and the certainty of its origin is very evident from the curative properties of mercury which of all other drugs, seems to have a power over this peculiar germ.

In my experience, about the same condition occurs in persons who have drank heavily in early life and then became abstainers. Somewhere in the future there will be unexpected lesions and diseases, both of cell and tissue, which can be traced back to early causes. It

may not take on the same form as before but there will be perversions, reversions and physical and mental disturbances which are not explainable from any present condition.

Very much in the same way, it has been noted that the Civil War veterans who came through without injury or disease when they reached 50 or 60 years suddenly developed profound exhaustion, debility and general failure which was manifest in all sorts and forms of lesions, and generally ended fatally.

The one conclusion I wish to urge is, that the clue to these obscure degenerations and diseases which are not traceable to present conditions had their origin far back, and a careful psycho and analytical study will show what this has been. Freud would have us understand that the sexual impulse is a most dominant factor in early and middle life in mental diseases, but it would seem that this is only one and not by any means so prominent as he would have us understand. Each physician can make a study of his own patients and he will find from psychoanalysis a wealth of material and causes and effects that will astonish him.

SPONTANEOUS SUBARACHNOID HEMORRHAGE.

Three cases of spontaneous subarachnoid hemorrhage are reported by S. Leopold, Philadelphia (*Journal A. M. A.*, Oct. 17, 1914). One patient suffered from tuberculous meningitis secondary to general military tuberculosis of lungs, liver, kidney and brain and another from syphilitic meningitis. Leopold says that aside from the rare pachymeningitis hemorrhagica interna and traumatic pial hemorrhage there has been little recognition of a spontaneous subarachnoid hemorrhage. Ehrenberg was the first to separate the spontaneous subarachnoid hemorrhage from the other forms and he divided them into two types, one in which the meningitic picture predominated, and the other with an apoplectic onset and coma. Another case reported was of the apoplectic type. Lumbar puncture has been of therapeutic value in some of the cases reported in the literature and it is of especial value in the diagnosis.

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H. C. TINKHAM, M. D., }Editors.
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EDITORIAL.

Those who have not followed closely the research work on poliomyelitis may not have noted that the epidemiology of the disease has been largely cleared by the demonstrations that there are in every outbreak of the disease many now paralyzed or "abortive" cases which are apt to escape diagnosis. Some investigators estimate that for every paralyzed case there are three which develop no paralysis. In other words the cord lesions resulting in paralysis are only one of the possibilities of the disease bearing a relation to the infection analogous to that which intestinal perforations bear to typhoid fever. There may be little in the symptomology of the non-paralyzing which without the occurrence of paralyzed cases would lead the physician to suspect anything more than one of the trivial affections of childhood. There is usually, fever, malaise, and muscle soreness. Sometimes vomiting symptoms lasting only a short time, from 12 hours to 3 days or four. These cases make a speedy and uneventful recovery. Unfortunately, they are as capable of transmitting

this infection during the time and for an uncertain period afterwards as the frankly paralyzed case. When we consider that the early cases in a community may be of the type we can readily comprehend, how the disease may be widely spread and occur in places quite remote from each other at, near or about the same time. While it is too much to expect that abortive cases be diagnosed before the appearance of any paralyzed case, surely every physician should be on the lookout for these cases after the paralyzed case has occurred to furnish the warning. Another thing which may have escaped the attention of some physicians is that there are laboratory tests which can readily be applied to the spinal fluid which are of the greatest usefulness in the diagnosis of the abortive case or cases in the pre-paralytic stage. The technique of lumbar puncture in the child is a most simple operation and one fraught with no danger. Physicians should resort much oftener than they do to this simple procedure.

The announcement that there has been available from an unknown source a considerable sum of money for the intensive study of poliomyelitis, must be very welcome to the entire state. Although very much has been added to our knowledge of this disease in the last few years, it is still the most hopelessly baffling affection to which we are subject. Our new knowledge, while giving strong hints as to the probable explanation of the sudden appearance of cases in isolated communities and farm houses, has as yet added nothing practical in the way of preventing such occurrences and the fruitful achievements in investigation of the etiology and pathology of the disease has as yet carried no corresponding advance in prevention and treatment. That these lacking and absolutely essential links in the chain of our knowledge of the disease will some time be found there can be little doubt and the thorough

knowledge of etiology, pathology and epidemiology which has been so largely attained is the foundation upon which the future achievements must rest, is obvious. Any gifts which can contribute ever so little to the end is an occasion

for great gratification. The cooperation of the Rockefeller Institute in the work about to be instituted under the terms of the gift is a guarantee that the work will be wisely guided and that useless duplication will not be made.

With this number the VERMONT MEDICAL MONTHLY completes the twentieth volume. The Journal has been under the present management for nearly seven years. During this time every effort has been made to publish a Journal that should meet the needs of the general practitioner. How far it has succeeded in serving the physicians of the state must be left with its readers to say.

Conditions of medical publication have changed materially during seven years. The income from advertisements has steadily decreased, while the expense of printing has increased nearly, or quite 25%. With a local subscription it is not possible to meet this growing deficit; it is not possible to increase the subscription list sufficiently.

We have carried this financial burden as long as it seems to us advisable. If the Journal has been of any service to the physicians of the state we shall feel repaid for our effort in maintaining it.

Thanking our readers for the universal kindness and courtesy which we have always received, and wishing you one and all the Compliments of the Season, the VERMONT MEDICAL MONTHLY bids you adieu.

THE EDITORS.

OBITUARIES.

Dr. George L. Peabody, of New York, died suddenly from heart disease, October 30th. He was professor of materia medica and therapeutics at Columbia, from 1887 to 1903.

Dr. Ed. H. Taft, aged 44 years, dropped dead in his home at Milford, N. H., Nov. 3rd. He graduated from Dartmouth in 1897, and had been in Milford for 12 years.

DR. A. F. A. KING.

Dr. H. C. Tinkham, dean of the medical faculty of the University of Vermont College of Medicine, received a telegram from Washington, D. C., announcing the sudden death from heart failure Sunday morning of Dr.

Albert Freeman Africanus King, professor of obstetrics at the medical college and a member of the faculty for 44 years. His death removes a familiar figure at the university and a man much beloved by the other members of the faculty and one popular with the students. He came to the medical college in 1870 when he was 29 years of age and last June he completed his 44th year of service on the faculty, never missing a single year.

Dr. King was born in England, January 18, 1841. He received his degree as doctor of medicine from Columbian University in Washington, the institution now being known as George Washington University, in 1861. He also was graduated from the University of Pennsylvania in 1865. He received two honorary degrees from the University of Vermont, master of arts in 1883 and doctor of laws in 1904. He

married Ellen A. Dexter of Boston, October 17, 1894.

In the course of his busy professional career, Dr. King was acting assistant surgeon of the United States army in 1864; professor of obstetrics, 1871-1914, and dean of the medical school, 1879-1894 of Columbia University; consulting physician of the children's hospital in Washington; obstetrician of George Washington University hospital; professor of obstetrics at the University of Vermont, 1870-1914; member of the Royal Society of Medicine of London; member of the American Gynecological society; fellow of A. A. A. S.; member of the Washington Academy of Sciences; president of the Washington Obstetrical and Gynecological society, 1886-1887, and of the Medical Society of the District of Columbia in 1883-1884.

Dr. King was the author of "A Manual of Obstetrics," published in 1882, and "Mosquitoes and Malaria," published in 1883. He was the first man who conceived the idea, which he carried to practical demonstration, that malaria had its origin in the bite of the mosquito.

The funeral was held at his late residence in Washington, D. C., Tuesday.

Dr. William H. Black of Richmond, Vt., died at the Fanny Allen Hospital of pneumonia, November 28th.

NEWS ITEMS.

The Dietetic and Hygienic Gazette, which is just completing the thirtieth year of its existence, has been purchased by *The Critic and Guide* Company, and beginning with January, 1915, will be consolidated with *The Critic and Guide*, and the combined journals will be under the editorship of Dr. William J. Robinson. The offices of publication are at 12 Mt. Morris Park W., New York City.

Dr. Charles P. Bancroft has been requested by the Board of Control to resign as superintendent of the New Hampshire State Hospital for the Insane.

The New York and New England Association of Railway Surgeons held one of its most successful meetings on Oct. 21 and 22, at the Hotel Astor, New York City, under the presidency of

Dr. C. A. Pease of Burlington, Vt. A symposium on the treatment of fractures was presented and proved to be highly instructive and of great interest. The address in surgery delivered by Dr. William S. Bainbridge of New York City was deeply interesting. Following are the officers elected for the ensuing year: President, Dr. W. H. Marcy, Buffalo, N. Y.; first vice-president, Dr. D. H. Lake, Kingston, Penn.; second vice-president, Dr. H. S. Stetson, Greenfield, Mass.; treasurer, Dr. J. K. Stockwell, Oswego, N. Y.; recording secretary, Dr. J. H. Reidm, Troy, N. Y.; corresponding secretary, Dr. Geo. Chaffee, Brooklyn, N. Y. The next meeting, celebrating a quarter century anniversary of the organization of the association, will be held Oct. 22, 1915 at the Hotel Astor, New York City.

Thirteen persons died in Bristol and vicinity Nov. 1, 2 and 3 as a result of a substitution of methyl for ethyl alcohol. Dr. A. D. Bisbee is under indictment for manslaughter as a result of this sale.

Dr. Edgar O. Crossman of Lisbon, who is a senator-elect, and a republican, is named as the choice of the board of control as Dr. Bancroft's successor. Dr. Crossman was a trustee of the hospital for a number of years. He is at present internal revenue collector. Also he is a very close friend to Councilor McGregor, who voted for Dr. Bancroft's removal, or to be exact, to request his resignation. Friends of Dr. Crossman said recently they believe he will not care for the place. It is said on good authority that Dr. John A. Gile of Hanover is a likely possibility for the place. Dr. Gile was a member of Governor Bass' council. Members of the board, however, are keeping quiet about Dr. Bancroft's successor, if they have one in mind.

The Supreme Court of New Jersey in *Smith vs. the Board of Feebleminded* holds that a statute providing for the sterilization of epileptics and other diseased or defective persons, including certain criminals, confined in charitable or penal institutions was unconstitutional because denying the equal protection of the laws. The decision is followed by a recent ruling of the United States District Court of Iowa in *Davis vs. Berry*, where the court holds that a statute providing for an operation upon criminals twice convicted of a felony on an order of the State Board of Parole, after a hearing not open to the public

and of which the criminal was not advised until ordered to submit to the operation, is unconstitutional as involving deprivation of due process of law. Two members of the court went so far as to hold that the statute also provided for a cruel and unusual punishment.

During the last session of the New York State Legislature, the committee for the prevention of blindness endeavored to have passed a law designed to prevent wood alcohol poisoning. At the public hearing on this bill, the danger of confusing cologne and colonial spirits was emphasized by the president of the State Pharmaceutical Association. He described a case in which a druggist ordered cologne spirits, or grain alcohol, to use in preparing his tinctures, extracts, etc. In response to his order he received a five-gallon can labelled "Col. spirits." For some reason this druggist analyzed the contents of the can, and found it to be wood alcohol, the "Col. spirits" evidently being used as an abbreviation for both Colonial and Cologne spirits. Since as little as a teaspoonful of wood alcohol has caused blindness, this man's precaution evidently averted just such a tragedy as has occurred in Vermont. In spite of the abundance of such evidence as this concerning the dangers of allowing wood alcohol to be sold under present conditions, those interested in the manufacture of this product were successful in their efforts to have the committee's bill defeated. The New York City Department of Health has recently amended its sanitary code to require all forms of wood alcohol to be labelled "wood naphtha" and to bear a poison label, together with the skull and crossbones. This is the most definite step that has thus far been taken in this country toward preventing wood alcohol poisoning from imbibition. This requirement, however will be effective following the inhalation of wood alcohol fumes in the industries. Throughout the State of New York the combined provisions of the state liquor, pharmacy and agricultural laws are at present inadequate to prevent death and blindness from swallowing and inhaling wood alcohol. When by state law or through rulings made by the state departments, all forms of wood alcohol are labelled poison, as is required by the New York City Department of Health, and wood alcohol in the industries is replaced by industrial (denatured) alcohol, we shall cease to hear of these pathetic and wholesale disasters.

The Orleans County Medical Society met at Newport, October 20th. Papers were given by Dr. F. E. Farmer of St. Johnsbury and Dr. Lynch of Sherbrook, P. Q. After these papers a general discussion of poliomyelitis followed. There was an attendance of about twenty-five.

BOOK REVIEWS.

TEXT-BOOK OF GENERAL BACTERIOLOGY.—By Edwin O. Jordan, Professor of Bacteriology in the University of Chicago and in Rush Medical College. Fully illustrated, 4th edition, fully revised. Philadelphia and London: W. B. Saunders Company. Price, \$3.00 net.

The fourth edition of this valuable work includes matter necessary to bring the book abreast of current bacteriological investigations. It contains a new chapter on the filterable viruses, additional matter on poliomyelitis and whooping cough. Always a practical book, it is now of added value by these new editions.

MEDICAL JURISPRUDENCE.—By Brothers. \$3.00. C. V. Mosby Company, Medical Publishers, St. Louis.

This book is the result of an effort by the author to cull from the subject of jurisprudence that part which is of interest to physicians. He has succeeded in producing a book which gives the facts wanted in a way to be understood by non-legal readers, a book that certainly should be appreciated.

"THE TONSIL."—By Barnes. \$3.00. C. V. Mosby Company, Medical Publishers.

This book gives a clear well written discussion of the tonsil including its development, histology, function, and pathologic conditions. Special attention is given to the tonsil as a source of general systemic infections. A book well worth reading.

DISEASES OF THE RECTUM AND COLON AND THEIR SURGICAL TREATMENT.—By Jerome M. Lynch, M. D., Professor of Rectal and Intestinal Surgery, New York Polyclinic; attending Surgeon, Cornell Dispensary; Fellow of the American Protologic Society, New York Gastro-Enterological Society, etc. Octavo, 583 pages, with 228 engravings and 9 colored plates. Cloth, \$5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book was written expressly for the general practitioner. It discusses rectal diseases clearly but not tediously. It tells what to do and how to do it. It also tells what to avoid. It is fully illustrated. A book that is sure to be appreciated.

THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago.—Volume III, Number III. Octavo of 215 pages, 54 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published bi-monthly. Price per year: paper, \$8.00; cloth, \$12.00.

The cases of especial interest in the volume are differential diagnosis of gastric and duodenal ulcer, differential diagnosis of acute appendicitis, cholecystitis and ascending urinary infection, tenoplasty, and several on bone work. This number reports an unusually large number of especially interesting cases.

A TREATISE ON CLINICAL MEDICINE.—By William Hanna Thomson, M. D., LL. D., formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College; Ex-President of the New York Academy of Medicine, etc. Octavo volume of 667 pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$5.00; half Morocco, \$6.50.

The author considers first an analysis of symptoms from a pathologic standpoint, then the use of remedies. A section on infections by living organisms which are classified and a section on diseases of peculiar organs and tissues. The book is well written and to the point. It is a valuable addition to the literature on clinical medicine.

DISEASES OF BONES AND JOINTS.—By Leonard W. Ely, M. D., Associate Professor of Surgery, Leland Stanford Junior Univ., San Francisco, Cal. Sextodecimo: 220 pages, 94 illustrations. Surgery Publishing Co., New York. Price, cloth, \$2.00.

This book is devoted almost entirely to the discussion of acute and chronic arthritis with the sequellae. The work is the result of a large amount of personal experience. It gives the meat of the subject without unnecessary discussion.

GUIDING PRINCIPLES IN SURGICAL PRACTICE.—By Frederick-Emil Neef, B. S., M. L., M. D., Adjunct Prof. of Gynecology, Fordham University School of Med., New York City. Sextodecimo; 180 pages. Surgery Publishing Co., New York. Price, cloth, \$1.50.

This book is intended to outline surgical procedure from the preparation of the patient for operation to the conclusion of treatment following operation. It gives very explicit instruction for each part of the work and would be a valuable guide for the surgeon who had not received the routine hospital instruction.

A TEXT-BOOK OF MEDICAL DIAGNOSIS.—By James M. Anders, M. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia, and L. Napoleon Boston, M. D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia. Second edition thoroughly revised. Octavo of 1,248 pages, 500 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net, half Morocco, \$7.50 net.

The second edition of Medical Diagnosis by Anders and Boston is revised to include the present knowledge of the clinical and laboratory methods of diagnosis. Much new material has been added.

The book is readable as well as practical. It is profusely illustrated. It is a valuable work on diagnosis.

SEROLOGY OF NERVOUS AND MENTAL DISEASES.—By D. M. Kaplan, M. D., Director of Clinical and Research Laboratories of the Neurological Institute, New York City. Octavo of 346 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.50 net.

This book is written with the view of getting together in one volume the ideas of various authors on the subject of Serology of Nervous and Mental Diseases. It constitutes a very convenient and useful addition to the literature of this subject.

CHILD TRAINING AS AN EXACT SCIENCE.—By George W. Jacoby, M. D. With full bibliography and thorough index. 384 pages, 15 full page illustrations. \$1.50 net; by mail \$1.62. Funk & Wagnalls Company, Publishers, New York.

Dr. Jacoby discusses the psychology of childhood including the nervous system and its functions. Psychic functions and development of the mental activity and intellectual development. Then he discusses psychic abnormalities—(Organic defects and functional disorders)—training, the influence of heredity, bodily and intellectual development, and finally discusses the care and training of the mentally deficient.

While the book is strictly scientific it is written in a way to make it easily understood.

A MANUAL OF DISEASES OF THE NOSE, THROAT, AND EAR.—By E. B. Gleason, M. D., Professor of Otolaryngology in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. 12mo. of 590 pages, 223 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$2.50 net.

This book is an admirable one for students beginning the subject or for physicians who wish to make ready reference. Brevity has not been substituted for clear description and more emphasis is given to the more common conditions and operations than to the rare conditions.

THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago.—Volume III, Number V. Octavo of 190 pages, 61 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published bi-monthly. Price per year: paper, \$8.00; cloth, \$12.00.

Interesting articles on Meningitis, Traumatic Epilepsy, Malignant Disease of the Penis, and the description of several cases of fracture of the ankle treated by nailing completes a most interesting volume.

"DIAGNOSTIC METHODS."—By Brooks. \$1.00. Published by The C. V. Mosby Company, St. Louis.

This is an admirable book on this subject. The author's methods of examination and routine work in reaching a diagnosis that are very helpful to the student and also to physician.

THE PRACTITIONER'S VISITING LIST FOR 1915.—Four styles: weekly, monthly, perpetual, sixty-patient. Pocket size; substantially bound in leather with flap, pocket, etc.; \$1.25 net. Lea & Febiger, Publishers, Philadelphia and New York.

The Practitioner's Visiting List gives the greatest utility and convenience in the least possible space.

LOCAL AND REGIONAL ANESTHESIA, including Analgesia.—By Carroll W. Allen, M. D., of Tulane University, New Orleans, with an introduction by Rudolph Matas, M. D., of Tulane University, New Orleans. Octavo of 625 pages with 255 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net; half Morocco, \$7.50 net.

This is a careful and full discussion of local anesthesia. It discusses the anatomy of the

nervous system, pain, the various local anesthetics, methods of administration, toxicology, etc., etc. It is a complete resume of the subject of local anesthesia.

A MANUAL OF DISEASES OF THE NOSE AND THROAT.—By Cornelius G. Coakley, M. D., Clinical Professor of Laryngology in the College of Physicians and Surgeons, Columbia University, New York. New (5th) edition. 12mo, 615 pages with 139 engravings and 7 colored plates. Cloth, \$2.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This is a most practical manual. It simplifies diagnosis and suggests practical treatment. It is brief but clear. The illustrations are excellent. The fact that it has come to the fifth edition is good evidence that the book is in favor with physicians.

BLOOD PRESSURE: ITS CLINICAL APPLICATIONS.—By George W. Norris, A. B., M. D., Assistant Professor of Medicine in the University of Pennsylvania; Visiting Physician to the Pennsylvania Hospital; Assistant Visiting Physician to the University Hospital; Fellow of the College of Physicians of Philadelphia. Octavo, 372 pages, with 98 engravings and 1 colored plate. Cloth, \$3.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book meets a real need in medical literature. The importance of blood pressure in diagnosis is being recognized more fully than ever and this book is opportune, furnishing physician and student with a full discussion of this subject and its value in diagnosis.

AN EPITOME OF PEDIATRICS.—By Henry Enos Tuley, A. B., M. D., Late Professor of Obstetrics, Medical Department, University of Louisville; Editor Louisville Monthly Journal of Medicine and Surgery; Late Chairman of Section Diseases of Children, American Medical Association; Ex-President American Association Medical Milk Commissions, etc. New (2d) edition, revised and enlarged. 12 mo, 324 pages. Cloth, \$1.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914. (Lea's Series of Medical Epitomes).

This book is an epitome of the essentials of the present knowledge of pediatrics written with the idea of furnishing the student of medicine the means for rapid review of the subject. In this respect the author has succeeded.

PRACTICAL THERAPEUTICS. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis.—By

Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics, *Materia Medica and Diagnosis* in the Jefferson Medical College of Philadelphia. New (15th) edition, thoroughly revised and rewritten. Octavo, 998 pages, with 144 engravings and 7 plates. Cloth, \$4.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This new (15th) edition of Hare's *Practical Therapeutics* has been revised so as to be the last word on the subject. Articles have been added on salvarsan and neosalvarsan, tuberculin and digitalis. The high character of the work is too well known to need further comment.

SYNOPSIS OF MEDICAL TREATMENT.—By Dr. George C. Shattuck. \$1.25 postpaid. W. M. Leonard, Publisher, Boston.

This little book represents an attempt to offer clearly and concisely sound principles of treatment based on known pathology. It is an admirable syllabus for students of medicine.

A TEXT-BOOK OF PATHOLOGY. For Students of Medicine.—By J. George Adami, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGill University, Montreal, and John McCrae, M. D., M. R. C. P., (London), Lecturer in Pathology and Clinical Medicine in McGill University, formerly Professor of Pathology in the University of Vermont. Second edition, enlarged and thoroughly revised. Octavo, 878 pages, with 395 engravings and 13 colored plates. Cloth, \$5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

In this edition the authors have largely removed the features which were objectionable in previous editions. The classification has been prefixed to each chapter. A new chapter on the more important infections and their prominent features, has been added. The revised book as it stands is in the reviewer's opinion the most logical treatise of the subject of pathology written. Its author has attempted with very great success to link pathology to physiology and symptomatology making it take its proper place as explaining deviations from normal functions and the symptoms that arise as a certain consequence of this deviation from the normal in structure and function.

RECREATIONS OF A PHYSICIAN.—By A. Stuart M. Christholm. Published by G. P. Putnam's Sons, 2, 4, and 6 West 45th Street, New York. Price, \$2.00.

This book contains a series of essays upon the following subjects: 1, specialization; 2, physi-

cians as men of letters; 3, banquo; 4, symbolism of names; 5, royal authors; 6, the inherent spirit of medicine; 7, on some translations of Horace; 8, some features of the science of medicine in the seventeenth century; 9, the *Picaro* in fiction; 10, on the prevention of disease.

These essays are remarkably well written and show great scholarship on the part of the author, a rounded scholarship which is too seldom cultivated among men of our profession. There is contained in its 300 pages a great fund of information much valuable philosophy, the whole presented in a polished literary style. The book should be a part of every physician's library.

PATHOGENIC MICROORGANISMS. (Including Bacteria and Protozoa). A Practical Manual for Students, Physicians and Health Officers.—By William H. Park, M. D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, and Director of the Bureau of Laboratories of the Department of Health, New York City, and Anna W. Williams, M. D., Assistant Director of the Bureau of Laboratories, New York City; Consulting Pathologist to the New York Infirmary for Women and Children. New (5th) edition, thoroughly revised. Octavo, 684 pages, with 210 illustrations and 9 full-page plates. Cloth, \$4.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

One of the most useful books on its subject for sanitarians, students and general practitioners. It deals especially happily with the practical problem of bacteriology. The authors have had great experience which they place in the work at the service of the reader.

THE CLINICS OF JOHN B. MURPHY, at Mercy Hospital, Chicago.—Vol. III, No. 6.

This number gives illustrations of Dr. Murphy's new office building. It is an admirable office building particularly well designed for the work of Dr. Murphy and his staff. It is a very clever advertisement of Dr. Murphy and his clinic.

INTERNATIONAL CLINICS.—Vol. IV, Twenty-fourth Series.

This volume contains articles on a wide range of subjects. These articles are contributed by well known physicians who are connected with large hospitals and who are doing active work. The articles are the opinions of men of large experience in special lines of investigation. The book is a valuable addition to medical literature. Price, \$2.00.

THE CAREER OF DR. WEAVER. A Novel.—By Mrs. Henry W. Backus. Cloth, decorative, illustrated; 12 mo., pp. 373; net \$1.25; postpaid \$1.40. Boston: L. C. Page & Co.

This is a very pleasing story well told and a very human interest, but this is not all. Certain ethical obliquities are shown up without varnish. The proprietary hospital, the public clinic, the commercial medical essay, the fee splitting vice and the self-exploiting doctor are shown up in a way to make a physician, but happily the other side is shown. In the hero, Dr. Jim the purest impulses which for the most progressive medicine, the physician who stands for more than eminence within the comparatively narrow confine of his profession are well painted.

CASTRATION IN WOMEN.

Alfred Gordon, Philadelphia (*Journal A. M. A.*, Oct. 17, 1914), notices the anatomic changes observed to follow removal of ovaries and remarks especially on the mental and nervous disturbances. He gives the results of his own observations in 112 cases and from an analysis of all the cases grouped in his study draws the following conclusions: "Removal of the reproductive organs in women causes disturbances in the domain of the nervous system. These disturbances are of a purely functional nature. The disturbances are somatic and psychic. The psychic manifestations, while individually they belong to any of the varieties of psychoneuroses, nevertheless in their ensemble do not constitute any of the well-established classical forms of psychasthenia. True insanities are not observed. The generally observed symptoms are: restlessness with a tendency to move from place to place; difficulty of self-control; dissatisfaction with all and everything; difficulty of finding contentment in one's own efforts; want of interest in all absorbing subjects and objects; indifference, indolence and pessimism. Sometimes there are outbursts of anger with a tendency to attack. Among other symptoms may be mentioned: insomnia, gastrointestinal disturbances of a functional nature, headache, vague pains or paresthesias, also occasionally glycosuria; tendency to obesity is also observed in some patients. While the psychic manifestations are sometimes of a very disturbing nature, nevertheless they do not present the characteristics of

genuine psychoses. For example, indifference and want of interest in surroundings lack the depth of those of melancholia or of dementia. Restlessness, which is so frequently observed here, lacks the characteristic features of exaltation in the motor sphere observed in cases of mania. As mentioned above, while individual symptoms of my cases resembled those of psychoses, the entire picture of each case lacked the depth and definiteness of any of the forms of insanity. Some of my patients had to be removed from their surroundings and isolated, not because they were insane in the proper sense of the term, but because of inconveniences caused by them to others. Besides, the subsequent histories of the last category of patients as well as of any other-patient of my entire series proved at no time the existence or eventual development of true psychoses. On the other hand, it is striking that the morbid phenomena persist with a remarkable obstinacy; at times they become more accentuated, at other's some improvement is noticeable, but then it is only temporary. Some of my patients have been under observation during a period of ten years and the condition still persists unaltered. Individuals who presented various manifestations of psychoneuroses before they fell into the hands of surgeons, had their psychic phenomena decidedly aggravated after the uteri and ovaries or only ovaries were removed. As in the removed organs healthy portions of tissue were invariably found, it is to be supposed that the removal of the latter is in some relation to the morbid phenomena observed after the operations. The logical conclusion seems to be that one must be very cautious in advising operative procedures on the generative organs and the tendency should be to preserve as much as possible of any amount of normal tissue found in the uterus or ovaries. No operation should be advised on healthy organs if a woman complains of vague nervous disturbances."

HEAT AND INFANT MORBIDITY.

The results of a study of climatic conditions, especially heat, on the health of infants are reported by H. F. Helmholz, Chicago (*Journal A. M. A.*, Oct. 17, 1914). A certain number of babies coming to the infant welfare stations of Chicago were observed for a definite time by

daily visits to their homes. Maximum and minimum thermometers were installed in their homes and read daily. The babies' temperatures taken, general condition noted, the number of bowel passages in twenty-four hours and the hygienic conditions generally. In thirty of the homes record was also kept of the humidity. The work was begun in the summer of 1912 and, as that was a cool summer, taken up again in 1913. Forty-six cases were studied in 1913, a majority for over two months. Four or more bowel passages a day were considered abnormal. All told, gastro-intestinal disorders were observed 39 times in 29 infants. Seventeen infants passed through the period without any disturbance whatsoever. Tables are given showing the room temperature and the infants' temperature on the days preceding and during the disorders. The room temperature varied from 73 to 110 F., and there seemed to be no relation of room temperature to infant hyperthermia as shown by the tables. The same was true in regard to gastro-intestinal disorders. Attention is called to the great difference that may exist between outdoor temperature and room temperature on a hot night. As a rule the room temperature reaches its maximum twenty-four hours after the outdoor maximum, the indoor always exceeding the outdoor maximum, the difference ranging from 10 to 20 in about the same number of cases and to about 40 in one case. Six babies died, four of them between July 28th and 31st, the period of greatest heat. In one case the death seemed due to neglect by the mother and in two cases the parents did not give the child proper diet. In another, the gastro-intestinal disturbance was parenteral in nature. In the six the direct effects of heat could be responsible in only one or possibly two cases. Its direct effect alone must be considered of relatively little importance as infants properly clothed and cared for can thrive in degrees of heat usually supposed to be harmful. Helmholtz concluded his paper saying: "This study would indicate that it is a matter of improper adjustment of the individual to its surrounding temperature rather than the height of the temperature that helps to swell the total of gastro-intestinal deaths during the summer. Our aim must be to educate the mothers to a realization that, as infants must be kept warm in the winter, so must they be kept cool in the summer."

MEDICAL EDUCATION STATISTICS FOR 1914.

The *Journal A. M. A.*, August 22, 1914, the annual Educational Number, contains statistics of medical colleges, students and graduates for the year ending June 30, 1914. There were 16,502 students studying medicine this year, 513 less than in 1913. These are divided into 15,438 in the non-sectarian colleges, 794 in the homeopathic colleges, and 270 in the eclectic colleges.

There were 3,594 medical graduates this year, 387 less than in 1913, and 889 less than were graduated in 1912. The non-sectarian colleges had 3,370; the homeopathic had 154 and the eclectic had 70. This is the lowest number of graduates since 1880.

There are six less colleges than in 1913, the total now being 101, consisting of 87 non-sectarian, 10 homeopathic and 4 eclectic colleges.

Since 1904, 85 medical schools have been closed, 49 of which were merged into other medical schools and 35 became extinct. During the same time twenty-four new colleges were organized, making a net reduction of 61 colleges. This reduction in the number of medical schools in this country, is giving way to a more normal supply of better equipped colleges. Of the 85 colleges which closed, 62 had been rated in Classes B and C by the Council on Medical Education of the American Medical Association. A large majority of those closed, therefore, were inferior colleges.

The marked reductions in the numbers of medical colleges, students and graduates is the reaction which would naturally follow the stupendous over-supply which this country possessed ten years ago. There would be no possibility of a scarcity of physicians in this country for years to come, even though the number of medical schools was again reduced by half.

Women students constituted 3.8 per cent. of all students, and of all graduates, 3.4 per cent. were women. Statistics show that college terms are being gradually lengthened. In 1901, 100 colleges had annual sessions of only 23 to 28 weeks each. Now only two colleges have such short sessions and about 95 per cent. have sessions of from 31 to 36 weeks. In 1904 only 42 per cent. of the colleges had sessions of 31 or more weeks.

Tabulated statistics of college fees, including

matriculation, tuition and laboratory fees, show that 14 colleges charge \$100 or less for each student per year, 66 colleges charge between \$100 and \$175 per year, and 21 charge \$175 or more. Among the colleges charging fees of less than \$100 are several strong state university medical colleges. On the other hand eleven colleges listed by the Council in Class C charge fees from \$100 to \$175 per year for each student. Considering the fact that diplomas from Class C colleges are reported as not recognized as a qualification for a license by thirty-one state licensing boards it would be poor economy to attend one of these colleges because of the slight difference in fees charged. In some cases it is a fact that in the same time and for even less money the student could attend one of the best equipped colleges, the diplomas of which are recognized in all states. Financial reports from 65 acceptable medical schools show an average actual expenditure for each student for one year of \$435 while each student paid on the average in fees only \$122. This shows that to furnish an adequate training medical schools must have more income than is derived from students' fees, in the form of either state aid or private endowment.

Of the 101 existing colleges, 84, or over 83 per cent. now require one or more years of work in a college of liberal arts for admission, and several others have announced the higher requirement to take effect in 1915. Of this number, 34 require for admission two or more years in collegiate work. That marked progress in this respect has been made, is shown by the fact that in 1904 only 4 colleges (less than three per cent.) required any collegiate work for admission. Twenty state licensing boards have established the requirement for preliminary education of one or two years' work in a college of liberal arts, thereby supporting the better class of colleges which have adopted that standard. Seven of these require two years of collegiate work, the equivalent to that required by university medical schools for the six year combined course for the B. S. and M. D. degrees.

Of the 3,594 medical graduates in 1914, 807 or 22.5 per cent. were also graduates of colleges of liberal arts as compared with 19 per cent. last year. This shows a decided improvement in the qualifications of those who are to practice medicine.

In recent years medical colleges have been greatly improved by the securing of endowments, new buildings, better equipped laboratories, better dispensary and hospital facilities and—most important—larger numbers of expert, full-time teachers. Improvements have been particularly rapid since the creation by the American Medical Association of the Council on Medical Education, in 1904.

STARCH IN INFANT DIGESTION.

T. S. Southworth, New York (*Journal A. M. A.*, Oct. 17, 1914), discusses the influence of starch on infant digestion. He agrees with Finkelstein as to the disturbing effects of carbohydrate sugars on the intestinal functions of infants but goes further in attributing these untoward results to fats as well. He reviews the historical and clinical evidence supporting this and also usefulness of starch in counteracting such efforts. He says it is time to ask ourselves seriously why it has been empirically found that cereals in the form of boiled and therefore gelatinized starch should have become an essential in the final composition of such diversified types of feeding as diluted cow's milk, fat-free butter-milk, whey modified milk and malt soup mixture. It would seem that starch has a protective action against the undesirable effects of fat in milk. Starch and dextrin less rapidly undergo acid fermentation than some of the sugars and they also excite a prompt and long continued secretion of pancreatic juice which is the opposite to the action of fats. While the practice of giving all the carbohydrates in the form of sugar frequently causes overtaxing of the upper intestine the slower conversion of starch spreads the process of absorption over a greater length of intestine and this must have its influence. In conclusion he says the indication for the use of starch appears to be in those suffering from digestive and nutritional disturbances. In such its chief end is not solely to nourish the infant but to also promote nutrition by making possible a more orderly digestion and absorption of the main nutriment—milk. It is admitted, of course, that excessive use of starch may itself cause digestive disturbance but instances of such abuse do not preclude its judicious employment.

VON RECKLINGHAUSEN'S DISEASE.

C. A. Elliott and A. F. Beifeld, Chicago (*Journal A. M. A.*, Oct. 17, 1914), report a case of generalized neurofibromatosis or von Recklinghausen's disease, which had a marked superficial resemblance to Hodgkin's disease and which had been diagnosed and the patient treated for such. They discuss the etiology and give it as their opinion, based on features of the case reported and others in the literature, that von Recklinghausen's disease belongs to the larger congenital anomaly known as status thymicolymphaticus sive hypoplasticus. The characteristics shown in the case reported were the peculiar lymphatic facies, the hypertrophic faucial lymphatic ring, the generalized lymphadenopathy, the enlarged spleen, the persistent and enlarged thymus, the scanty axillary and pubic hair, the cryptorchidism, the small testicles and penis and the very marked tendency to tumor formation. Direct proof the nature of the disease as stated cannot of course, be adduced but the close interrelation of the lymphatic status and ductless gland conditions is well known and there is considerable experimental evidence that von Recklinghausen's disease is a manifestation of both. This is more understandable of the embryonic nature of the tissue forming the tumors is admitted.

 THE TONSILS.

J. H. Comroe, York, Pa., (*Journal A. M. A.*, Oct. 17, 1914), makes a plea for the tonsil as an organ whose existence is more often beneficial than otherwise and the sacrifice of which is often needless. There is no doubt that the removal of tonsils is often needed but he thinks that there is probably too much zeal for operation. In 1912 there were in Philadelphia 37,000 recommendations made for the removal of tonsils by the school inspectors and in the same year in New York it was reported by the inspectors that 30 per cent. of the children had hypertrophied tonsils. As it was the desire of the department to fix a certain standard as to when operation should be performed, a letter was sent to a number of eminent specialists in nose and throat diseases to obtain their opinions on this point and

it is a significant fact that no two of them exactly agreed. Comroe says that the faucial tonsil is a natural organ; some questions as to its physiology have been definitely settled and there is almost uniform agreement as to others, but some points still remain to be solved. From their important anatomic position they would seem like the first line of defense in the throat and this function is a most important one. Various authors have shown that the tonsils contain a vast number of leukocytes and Comroe refers to authorities like Adami, Brieger and others to show the defensive action of these bodies. Besides, he adds that it has been conclusively proved by Hodenpyl that they actually antagonize the entrance to their interior of infectious germs. The phenomena of absorption at the level of the tonsils have been studied experimentally by Labbé and Levi-Sirugue, whose findings are in full accord with those of Hodenpyl. The clinical proof of its defensive action has also been abundantly given. In addition to this the tonsil has other functions, such as the internal secretion believed in by Escet, Shurley and others, its value as a lubricant emphasized by Miller, its effect on the voice and the continued autovaccination asserted to occur by Digby which causes a certain degree of immunity. While various diseases have been credited to the tonsils as foci from which they can be distributed, Comroe remarks that many of the most important organs of the body are also foci of infection but their extirpation is not demanded. He, therefore, protests against operative intemperance as regards the tonsils, which he thinks were placed in the body for good and holds that their function is physiologic rather than pathologic in the organism.

 A MOUTH WASH IN FEVER CASES.

In all fever cases where the tongue is coated, the lips dry and cracked and the teeth covered with sordes, the use of some cooling and soothing mouth wash would seem to be indicated:

Glyco-Thymoline in a 25% solution with cold water fills this want perfectly. Its frequent use is grateful to the patient and at the same time a great factor in relieving the condition.

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of definite Potency.

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Our fluid extracts and tinctures are adjusted to fixed and definite standards of strength, alkaloidal or otherwise. When chemical assays are not available, as with digitalis, aconite, ergot and a few other drugs, tests are made upon animals by methods yielding reliable data as to both quality and activity. Not an ounce of any fluid extract or tincture goes forth under our label that does not measure up to the adopted standard.

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Why chance results with fluid extracts and tinctures of unknown or variable therapeutic worth? The specification of "P. D. & Co." on your prescriptions will insure products that are accurately standardized—products of established quality and potency.

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Detroit, Michigan.

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THERAPEUTIC NOTES.

A SEDATIVE IN SEXUAL IRRITATION.

It is in irritation of the sexual centres, manifested by exaggerated desire, premature ejaculation with lack of relief following, sleeplessness and a general instability of the nervous system, that Pasadyne (Daniel) will exert a marked influence of a beneficial character.

A quality that gives an added value to Pasadyne is its freedom from untoward effects. It is well known that this product is a preparation of *passiflora incarnata*, the name Pasadyne distinguishing it from inferior products and preventing substitution.

A sample bottle may be had by addressing the laboratory of John B. Daniel, Atlanta, Ga.

PROPHYLAXIS AGAINST "COLDS."

In the case of a great many persons who each winter suffer severely from "colds" even involving the smaller bronchi, one of the most successful means of guarding against such infections is the systematic use of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) during the winter season.

By means of this cod liver oil product, which is exceptionally palatable, the tissues, particularly the tissues of the respiratory tract, are increased in resisting power against microscopic invasion, in which phenomenon, of course, is to be sought the explanation of the power of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) to reduce the likelihood of "colds."

PAIN: ITS RELIEF.

If ever direct methods are needed it is in the relief of pain. And the application of a direct method in pain embraces, of course, the administration of a reliable and effective anodyne—and such an agent should be free, to the greatest extent, from evil effects.

A product that answers these requirements of an anodyne is Papine (Battle). Its effect is prompt and positive and it possesses a mini-

num of bad effects. For these reasons Papine is entitled to first rank among pain-relieving agents.

SPECIFY THE BRAND.

Every now and then one is forcibly reminded of the fact that the pharmaceutical market of today contains many so-called therapeutic agents of doubtful medicinal value—agents of indefinite and varying potency. The point was well brought out, not so very long ago, by a certain chemist who purchased in the open market ten samples of tincture of opium in which the content of morphine varied from 2.7 to 22.8 per cent. Of three tinctures of aconite which he examined, one was found to contain 9 per cent. more of aconitine than the standard required, and another 20 per cent. less. Two specimens of fluid extract of the same drug contained 18.5 per cent. and 25.5 per cent. more, respectively of the alkaloid than is officially required. Samples of belladonna showed 11.5 per cent. less of mydriatic alkaloids in the fluid extract of the root, and 17 per cent. more in the tincture of the leaves. Some tinctures and fluid extracts of *nux vomica* revealed an excess of strychnine—in one case of 19 per cent.

The foregoing facts are called to mind by an announcement which is appearing in medical journals over the signature of Parke, Davis & Co., bearing the title, "Fluid Extracts and Tinctures of Definite Potency," and opening with this significant question: "When writing a prescription for a fluid extract or tincture, what assurance have you that the product dispensed will be medicinally efficient?—that it will be active, yet not too active?—that it will produce the therapeutic result that you hope for and expect?"

It is well known that Parke, Davis & Co., are authorities upon the subject of standardization, chemical and physiological, and it may be confidently asserted that the practitioner of medicine who reads and ponders what is said in the announcement referred to will find that his time has been well expended. The physician's obligation to his patient, it should be remembered, does not cease with the writing of a prescription. There remains the further duty to assure himself that trustworthy products are used in com-

pounding that prescription. When he prescribes a fluid extract or tincture the physician owes it to his patient to specify the brand—the brand of a reliable manufacturer.


COD LIVER OIL AS A NUTRIENT.

In passing judgment on cod liver oil, it should be remembered that it is a food agent, and not a drug. If this is done, the value of this nutrient will be much better appreciated. Since cod liver oil is an agent that must be given over long periods of time, it is very essential that a palatable product be chosen, otherwise the gastric apparatus will be disturbed. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is a very valuable preparation of cod liver oil and is in wide use among the medical profession. Containing as it does, all the active principles of the oil, its effectiveness is in no wise diminished by reason of the process it has gone through, on the contrary, its very palatability has added to its therapeutic value by making it possible to give it under the most trying circumstances, and contributing to its ease of assimilation. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) will be found of high worth in states of under nourishment.

TO PREPARE A PLACE FOR THEM.

With these words Rev. Mr. Hahn took leave of his little flock: "Brothers and sisters, I come to say goodby. I don't think God loves this church, because none of you ever die. I don't think you love each other, because none of you marry. I don't think you love me, because you haven't paid my salary. Your donations are mostly fruit and wormy apples, and by their fruits ye shall know them.

"Brothers, I am going to a better place. I have been called to be chaplain of a penitentiary. I go to prepare a place for you, that where I am there ye may be also. May the Lord have mercy on your souls. Goodby."—*Indianapolis Medical Journal*, April, 1914.



K.O. BOUCHE FOR THE APPLICATION OF
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Egg storage by sterilization is to be effected in Pittsburg, Pa., for the first time in this country. The plant is in process of erection. An egg, even in very hot weather, by the sterilization process, can be stored for ten months and, when taken out, be as fresh as a newly laid egg, according to those who have made the process a success in Europe for the last five years. The promoters say by the process the price of fresh eggs will have to come down, as it has in Europe.

Anthrax, one of the much-dreaded contagious diseases of cattle and which often is communicated to man, has been transmitted by a stable fly in experiments conducted by M. B. Mintzman, entomologist of the Philippine Department of Agriculture.

The recovery of the syphilis spirillum from the brain of the parietic, Noguchi's discovery, is now followed by the regained germ's cultivation in lower animals. This completes the cycle of these new and extremely important facts.

The Western Medical College at London, Ont., has become the medical faculty of that city's Western University.

Gifts of \$100,000 each from Jacob H. Schiff and James A. Scrymser, and an annual endowment of \$2,000 from Mrs. Whitelaw Reid were announced October 30th by the American National Red Cross, through the New York Chapter. The Scrymser gift is to go to the fund for the purchase of land in Washington on which the Government is to erect a building for the Red Cross as a memorial to the women of the Civil War. The donations of Mr. Schiff and Mrs. Reid are intended as endowments for the funds of the town and country nursing service of the Red Cross work.

The Commission on Electric Shock, named by the National Electric Light Association, the American Institute of Electrical Engineers and the American Medical Association, has issued its report. This is published as a handbook and chart by the *Electrical World*, is already official

in Canada and is being translated (by permission) for the Spanish, French, Italian, German, Japanese and Magyar peoples. Several hundred thousand copies are already off the press and practicing physicians should study its teachings.

Denver is about to become the center of the world's radium industry. A site for a plant, to be conducted by the United States Government, financed by the National Radium Institute and operated under the direction of leading scientists, has been chosen. This plant will be devoted to experimental treatment of radium-bearing ores, and will be the largest of its kind in the world. Preliminary plans for installing complete apparatus for laboratory and research work are under consideration by the United States Bureau of Mining. The Government staff of rare metal experts now in Denver, under the direction of R. B. Moore, will be assisted by scientists of international repute.

A midwife in New York, N. Y., must now be 21 years of age or upward, of good moral character, and able to read and write. She must be clean and constantly show evidence in general appearance of habits of cleanliness. The applicant must also present a diploma or certificate showing that she is a graduate of a school for midwives registered by the Board of Health of the City of New York as maintaining a satisfactory standard of preparation, instruction, and course of study, but the requirement of a diploma shall not apply to any person who is now or has been hitherto authorized to practice midwifery by the said board.

Profits from the sale of newspapers on the streets of Milwaukee enabled Philip Eisenborg, of that city, to begin a course of study at a medical school in Chicago December 8th.

The common towel, the common drinking cup and the common brush in the barber shop must go, says Pennsylvania's Health Board.

The Milwaukee County (Wis.) Medical Society and others in that state refuse to supply health certificates under that state's new eugenics

marriage law because of its almost impossible provisions.

What is regarded as a certain remedy for effecting at least a partial cure for general paresis, hitherto incurable, was announced at Paris by three leading French physicians, Professor Levaditi, bacteriologist of the Pasteur Institute; Dr. Auguste Marie, a leading specialist of the state mental department, and Dr. de Martel, one of the leading surgeons. The treatment consists in two trephinations of the skull and then of the injection of Dr. Ehrlich's salvarsan serum between the membranes and the brain. A maximum dose of "606" is thrown into the vein of a rabbit. One hour later the rabbit is fully bled and the resultant serum heated for three-quarters of an hour at 55° C. Ten cc. is the dose for submeningeal injection, and marvelous results are shown.

Tea brewed in Ireland is denounced as worse than alcohol in a current report of the Irish Milk Commission upon the scarcity of milk in Irish towns.



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ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

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AN INVITATION TO PHYSICIANS

The Charles B. Towns Hospital, for the Treatment of Drug Addictions, Alcoholism and Nervous Diseases, 203 Central Park West, at 89th St., New York City, extends an invitation to all physicians to visit its new quarters, recently purchased, and familiarize themselves with the method and treatment. The Towns Hospital has been established 14 years. It is operated under conditions which render the alienation of the patient from his physician impossible. There is nothing secret; physicians are kept informed from the first to the final dose of medication and a complete bedside history of the case is fully charted. Physicians are not only welcome during the treatment but are invited to follow every detail of its administration. The Towns Hospital is everything its name implies—a hospital in the strictest sense, under the direction of physicians and trained nurses experienced in the work. The active treatment requires only a few days and its brevity is a distinct advantage to out of town physicians who may desire to accompany their patients to the city. Rooms may be had en suite for those wishing such accommodation, and special provision is made for patients of moderate means.

The treatment in detail has been fully explained in articles appearing in the Journal of the American Medical Association, and reprints together with a booklet and articles which have appeared in other publications, containing full information relative to the treatment, terms, etc. will be mailed on request.

Consulting physicians constantly in communication. Staff of four resident physicians always in attendance. Telephone, Riverside 6710

By including various mineral salts in eye glasses, Sir William Crookes can now prevent the onset of cataract in glassworkers. Full details of his years of altruistic study are to appear shortly.

Professor Chauveau and Dr. Lucett, at Paris, announced an important discovery which they assert will revolutionize the treatment of typhoid fever, whooping cough and other diseases by vaccine. They have found that the bacilli, on being subjected to movement, become much more abundant and active, enabling the propagation of vaccines of greatly enhanced efficacy. They have devised an apparatus to keep the cultures in constant motion.

Abundant bacterial life in the stools and rheumatism often go together. Use intestinal antiseptics.

We hear so much about the use of the bromides in diseases of the nervous system that we

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readily becomes a chronic condition since the toxemic patient lacks that initiative which is necessary to active physical exercise; thus *cause* and *effect* form a circle which must be broken by rational therapeutic treatment while proper hygienic conditions are being re-established.

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