THE CALIFORNIA STATE JOURNAL OF MEDICINE

EDITED BY

PHILIP MILLS JONES, M. D.

VOLUME VI

1908

PUBLISHED BY THE
MEDICAL SOCIETY STATE OF CALIFORNIA
SAN FRANCISCO

PRESS OF
THE JAMES H. BARRY COMPANY
SAN FRANCISCO, CAL.

CONTENTS AND INDEX

Editorial Notes.

Publications.

OFFICERS

OF THE

Medical Society of the State of California

President ..... WESLEY W. BECKETT, Los Angeles

First Vice-President ..... FRED. BAKER, San Diego

Second Vice-President ..... E. G. McCONNELL, San Francisco

Secretary ..... PHILIP MILLS JONES, San Francisco

Treasurer ..... UNION TRUST COMPANY, San Francisco

COUNCILORS

First District—San Diego, Riverside, Orange and San Bernardino Counties:
F. R. Burnham, San Diego, Cal.

Second District—Los Angeles, Ventura and Kern Counties:
Geo. H. Kress, O. T. Johnson Building, Los Angeles.

Third District—Santa Barbara, San Luis Obispo and Monterey Counties:
T. C. Edwards, Salinas, Cal.

Fourth District—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties:
Geo. H. Aiken, Fresno, Cal.

Fifth District—Santa Clara, San Mateo, San Benito and Santa Cruz Counties:
A. E. Osborne, Santa Clara, Cal.

Sixth District—San Francisco County:
C. G. Kenyon, 1452 Sutter Street, San Francisco, Cal.

Seventh District—Alameda, Contra Costa, San Joaquin and Calaveras Counties:
E. N. Ewer, 1111 Washington Street, Oakland, Cal.

Eighth District—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties:
Jas. H. Parkinson, Sacramento.

Ninth District—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties:
A. H. Mays, Sausalito, Cal.

At Large—A. B. Grosse, San Francisco; F. M. Pottenger, Los Angeles; and H. A. L. Ryfkogel, San Francisco.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -

2210 Jackson Street, San Francisco.

Telephone, West 5975.

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI JAN., 1908. No. 1

EDITORIAL NOTES.

A NEW YEAR.

To all of our readers, Greeting! May the year deal kindly with you, and bring you much that is good and little that is of sorrow or trouble; may the spirit of peace and harmony prevail with you throughout the year, and may the mantle of jealousy drop from you as a rag that is worn out; may charity, justice and brotherly love guide you always in your thoughts of and your relations with your fellow practitioners of medicine; may it bring an end to bickerings and dissensions, and, departing, may the year leave with you a better stored mind, contentment with yourself and your fellows, and the inward knowledge from which comes peace of mind, of a twelve-month of good, honest work, done with the very best that is in you and to the betterment of at least a portion of mankind. Give of your time and your brains the best you have to your medical society, that, in so giving, you may unselfishly help the entire medical profession and the people who are dependent upon it for health and protection; where there is an active and industrious medical society, there will you find good doctors and responsive and grateful patients. Let no word of idle slander or suppositious criticism of a colleague pass your lips; if you can not speak well of a brother physician, speak not at all, for when you slander another physician you hurt yourself as well, and the entire profession is belittled in the eyes of the people. May your interest in your medical society work increase with the passing months, and may the year close upon a more closely united and more intimately related medical profession, thus giving to the people of our State the very best medical supervision. May happiness be with you, one and all.

SIXTH VOLUME.

With this issue the JOURNAL enters upon its sixth volume, and it bespeaks a continuance of that friendly help and co-operation which you have given it in the past years, for the present year, and for those to come. That it has prospered more than, six years ago, we could have thought possible, is largely due to your aid and your assistance. The Publication Committee extends to you its sincere thanks for the hearty manner in which you have supported all of its policies, and the appreciation which, from time to time, you have shown of its work and its efforts to put in your hands each month a little something that may help you. We ask you to continue this support and to extend it. With this issue nearly every advertisement of a medicinal preparation that has not been approved by the Council on Pharmacy and Chemistry has been dropped. One or two, for which the contracts have yet a month or so to run, remain; but they will not appear after the expiration of the contracts, unless approved by the Council. Of course there is no particular credit to be claimed for adopting this standard for our advertising pages—it is merely the final outcome of the five years' fight which your JOURNAL has waged upon the nostrum business. What we desire to call to your attention is the fact that eliminating all this unapproved material, makes our advertising pages of more value to you, and also to the advertisers who remain—and we want you to let them know it by taking an increased interest in the announcements of manufacturers which appear in our pages. Will you help us in this way?

DUDLEY TAIT.

To speak with thinly veiled sarcasm of one who has worked hard and long and conscientiously for the benefit of the people and the betterment of a learned profession, does not reflect any considerable degree of credit upon the critic. It is therefore with no degree of pleasure that one reads an editorial in the last issue of the *Southern California Practitioner*, entitled "Tait de trop," for the editorial, even though it speaks highly of the work that Dudley Tait has done for the elevation of our profession, conveys its sting of sarcasm not so much in the tail as in the head. The work that Tait started some six or seven years ago, and which has created no small amount of antagonism and ill-feeling toward himself, is now recognized as the very one essential thing in the elimination of fraud from medical education—*the thorough and rigid investigation of medical schools and preliminary educational requirements.* We have seen enough in the past few years of revelations, here in California, and as a result of the work of the Council on Medical Education all over the United States, to know that without good medi-

cal laws, rigidly enforced, and dealing with preliminary requirements, we would again have the joyous day of the "diploma mill." That the "diploma mill" is a thing of the past is due to just such men as Tait, working honestly and fearlessly to secure *honesty in medical education*. Therefore, when one sees the Board of Examiners deprived of the services and the help of Dudley Tait, it does not strike one who is looking to the defeat of fraud as a cause for rejoicing, irrespective of the reasons, if any, for such deprivation. At times he has seemed to be gifted with a sixth sense which guided him unerringly to the detection of—shall we say "irregularities"? Some months ago, for instance the JOURNAL printed some cases of this sort taken from the records of the Board of Examiners, and among them was the case of one Painton, a graduate of the College of Physicians and Surgeons of San Francisco, who, it appeared, had made false affidavit of the amount of time spent in the college work. Much denial and many angry words came from representatives of the college, but, in the announcement for the year ending May 14th, 1908, of the College of Physicians and Surgeons of San Francisco, we find under "students matriculated 1906-07, freshman medical," the name of H. R. Painton. If he secured his former degree "in the regular course of instruction and without fraud," why should he go back and matriculate as a freshman? It is safe to say that this case, merely one of very many, would never have been detected had Dudley Tait not been on the Board of Examiners. Should we rejoice to see him go from that work? Is it not rather a distinct loss to the people of the state?

THE PLAGUE SITUATION.

The plague situation remains about as it was, though there are certain symptoms of improvement in general conditions. In San Francisco the average number of new cases and infected rats seems to keep up, but rats are becoming scarcer and there has been a decided decrease in the flea population, naturally to be expected with the coming of the winter rains. A number of desirable ordinances have been drawn up and presented to the Board of Supervisors, and it is expected that these will be passed in due season. The police department shows a disposition to cooperate more energetically with the authorities in charge of the anti-plague work, and it is the general opinion that the Board of Health under the newly adopted charter amendment, now consisting of three doctors and four laymen, will be a more satisfactory body; as to that, however, there are differences of opinion and time alone will show how the new plan works. Elsewhere, we reprint the major portion of an article which was printed in the JOURNAL in 1904, by Dr. Lloyd, on the connection of the rat with plague. At the time this was printed, it was almost, if not quite, the first article showing conclusively what we have since accepted—that plague is a disease of rats and other rodents, and to which disease man is, at times, susceptible. The general request for this article has been so great that we have taken the liberty of reprinting the essential parts of it for your reperusal.

SCIENTIFIC PROGRAM.

The scientific programme for the April meeting of the State Medical Society is assuming definite shape. It has been the purpose of the committee to make all the papers presented of general interest, and to this end the sectional meetings have been largely eliminated and two subjects for symposia are announced, which are believed to be of equal interest to all workers in medicine. Contributors to the programme have generously and wisely consented to limit the reading of their papers to ten minutes. The published papers may, of course, be as long as necessary. In order to prevent long and often tiresome discussions, it is hoped that a rule will be established, limiting discussions to two and a half minutes. Deserving contributors will suffer through neither of these restrictions, for the Society may on demand grant any speaker an unlimited time on the floor. Each of the three mornings and two of the available afternoons are to be devoted to scientific programmes. In response to popular demand, one afternoon is to be left open to allow the visitors to the meeting to see more of each other in a social way than has heretofore been possible. The morning of the first day is to be filled by the address of the President, Dr. George H. Evans, the reports of various committees, and a general discussion of such subject or subjects as seem, in April, of greatest interest to the Society. The second and third mornings are to be devoted to a symposium on syphilis and one on the thyroid gland. The list of promised contributors to these symposia contains the names of Drs. Terry, Moffitt, Wherry, Tait, Hunkin and Thomas. It is hoped that Dr. James B. Herrick of Chicago will also be able to take part in these symposia. The first afternoon of the session is to be given up to a joint meeting with the Western Section of the American Laryngological, Rhinological and Otological Society. Dr. W. Humes Roberts has the arrangement of the programme for this afternoon in charge. One or two other sectional meetings may also take place on this afternoon. The last afternoon of the session is to be devoted to the reading of general papers on both medical and surgical subjects. The names of Drs. Rooney, Hamlin, Wakefield and Robertson are found in the list for the programme of this last day. In addition to the names announced at this date, the committee has in its possession a list of men both from California and eastern states who have promised papers and believe themselves able to be present at the April meeting. The committee hopes in the near future to be able to announce their names and the exact titles of the papers which they are going to present.

"H-M-C" TABLETS.

It is to be regretted that we have not space to reprint in its entirety an article which appeared in the *Journal A. M. A.*, December 21, 1907, exposing the "hyoscin-morphin-cactin" anesthesia. No other preparation has been so extensively advertised, and, because of the position of the gentleman who is putting it out commercially, the fact that he owns a medical journal himself, and is a most prolific writer and contributor to other journals, no other preparation has had so many "write-ups" in a given period as has this wonderful "new" anesthetic. But the *Journal A. M. A.* shows that it is not "new," it is not wonderful, it is a secret proprietary, it is being exploited in ways which, to say the least, are not above question—and it is *dangerous;* just as dangerous, no more and no less, than the old scopolamin-morphin anesthesia which has been known, used and almost discarded, years ago. Do not be misled by the glib words of the promoters, the Abbott Alkaloidal Company, or that most prolific of writers, Dr. Wm. C. Abbott; the stuff is *DANGEROUS.* How many men do you know who have ever given over five thousand anesthesias? Probably not one; possibly one. One such was consulted upon this point, and he gave it as his opinion that the promiscuous use of hyoscin or scopolamin and morphin with or without "cactin" (which is an unknown "concentration") is *dangerous in the extreme.* He has used scopolamin and morphin in properly selected cases, for ten years or more, and he knows whereof he speaks. Even the manufacturers admit that the use of scopolamin and morphin is dangerous, but they claim that they use hyoscin and that hyoscin and scopolamin are not the same clinically. This statement, made by the interested manufacturer, is directly opposed to the statements of all the experts in the world, and is contradicted by the manufacturers of the chemical themselves. As the *Journal A. M. A.* so aptly points out, the manufacturers of this dangerous combination, who are in every possible way urging the members of our profession to use it indiscriminately, and who are making for it the most utterly extravagant statements, must either be ignorant of generally recognized and well known facts, or they must be ignoring them for their own gain. Will you believe the pharmacopeias of the world, the statements of all chemists who have investigated the subject, and the statements of those who manufacture scopolamin, that hyoscin and scopolamin are identical, or will you believe the statement of the interested manufacturer of the "H-M-C" anesthetic that they are not the same? Every physician who has the slightest regard for his obligations toward his patients and his own responsibilities, should read the article in the *Journal A. M. A.* and should remember that hyoscin, or scopolamin, and morphin is a *DANGEROUS* mixture to use, and that "cactin," is inert, despite the contrary statements of the interested manufacturers.

HOMEOPATHIC MATERIA MEDICA.

The materia medica of our homeopathic brethren must have greatly increased since the time of Hahnemann, if one may judge at all from the various remedies which are presented to their attention through the medium of the advertising pages of the homeopathic (?) medical (?) journals that have reached our office. *The Medical Advance, The Hahnemannian Monthly, The Cleveland Medical and Surgical Reporter, The Critique* and the *New England Medical Gazette* are publications of the class indicated, and a casual inspection of their advertising pages is instructive. All of these publications claim to be strictly homeopathic; some of them are strenuously so. Therefore, let us see what they recommend their readers to use: Ferro-nutrine; bovinine; hydroleine; sal hepatica; aletris cordial; celerina; pinus canadensis; anti-itis; Hagee's cod liver oil; Fellow's hypophosphites; sanmetto; Gray's glycerine tonic; bromidia; antikamnia (which appear opposite the advertisement of the American Institute of Homeopathy); pepto-mangan; meatox; glyco-zone; antiphlogistine; glycothymoline; Peacock's bromides; seng; cactina pellets; chionia; Angier's petrolium emulsion; Colden's liquid beef tonic; dioviburnia; neurosine; germaletum; hydrozone; urasol; glyco-heroin and passiflora. These are merely the "curious" things that are advertised; in addition there are "ads" of a number of standard preparations, some of which have been approved by the Council of Pharmacy and Chemistry. Is it any wonder that the Homeopathic (?) medical (?) journals are as strongly opposed to the work of the American Medical Association, through its Council on Pharmacy and Chemistry, as are the medical (?) journals of the regular school? It is just a matter of dollars and cents, when all is said and done; and the nostrum man has the dollars to pay for advertising space, for that is what makes his business.

FISH OR CHILDREN?

Your JOURNAL has preached on many occasions the necessity of educating our legislators in the matter of the proper sanitary care of the human animals in our state, and once again we revert to the subject. Recently, a gentleman in the South called attention to the fact that our state expended something like thirty times as much money on the care and protection of its fishes as it did for the care and protection of its children! How truly touching! And most of us believe that children have souls and fish have not; yet the fish are protected in innumerable ways—and the children not at all. Possibly we have taken too literally the injunction "Suffer little children to come unto me," and our lack of care for them and their health or their lives is merely an evidence of obedience and a desire to let the little children go to the Lord as fast as possible! Game wardens are active in pursuit of him who catches the delectable trout out of season; but are ordinary town trustees or health officers as active in the pursuit of the par-

ent who sends its child to school unvaccinated, or permits the spread of diphtheria to many other children throug failure to abide by reasonable quarantine orders? And even the few little pennies which the state expends for the sanitary protection of its citizens are doled out grudgingly. Think of it! Fish worth thirty times as much as children!

AN OLD FRIEND.

Vin Mariani was advertised in this JOURNAL some two years ago. When the advertisement was submitted we were at a loss what to do. The Publication Committee had heard that the wine contained cocaine and so wrote to the manufacturers, and asked them for a formula. A most beautiful analysis, supposedly made by a French chemist, was returned and the idea that the preparation contained cocaine was spurned with indignation. Perish the thought! But times change and sometimes wisdom comes out of darkness. The pure food and drugs law was passed —largely through the publicity given to existing rotten conditions by *Collier's Weekly*—and then we began to learn some things. The label had to tell the truth, and, lo! the label on Vin Mariani stated that the preparation contained, if memory serves, one-tenth of one grain of cocaine to the ounce! From *Collier's* of November 16th, we learn that Massachusetts, having a good anti-cocaine law, has been active in the prosecution of its provisions, has advertised certain preparations which contain cocaine and which therefore cannot be sold at retail, and has secured convictions for the violation of this statute. We read, with considerable interest in view of the former protestations of the Mariani people: "Since June seven convictions have been secured for the sale of the following preparations: Maltine with coca wine, Vin Mariani, Standard Catarrh cure." Now do you not think that is rather "going some" for a preparation which the manufacturers stated repeatedly did not contain cocaine? It must be extremely painful to the house of Mariani, benefactors to the human race in general, to have retail merchants convicted for selling their stuff in open violation of an anti-cocaine law; we feel for them in this rude shocking of their delicate sensibilities; but the subject is far too painful to dwell upon.

THE RAT AND HIS PARASITES; HIS ROLE IN THE SPREAD OF DISEASE, WITH SPECIAL REFERENCE TO BUBONIC PLAGUE.*

By B. J. LLOYD, M. D., Assistant Surgeon U. S. Public Health and Marine Hospital Service.

Although there are several hundred species of rodents included in the generic term "mus," we need not, as a rule, concern ourselves with distinctions. The "Norway," or common brown rat (Mus Decumanus), is so well nigh universal and, unfortunately, so intimately associated with sanitary and shipping interests, and its habits are so nearly representative of the tribe, that we can practically pay our respects to the entire group in a discussion of this species. * * * A great deal has been said pro and con on the subject of whether or not the common rat flea will attack man. It has at last been fairly definitely settled that the rat harbors several species, and that some of them, at least, do attack man. It is quite probable that even those that do not bite man, if such there be, are not infrequently found on the body, and their mere presence is almost as much a menace as if they did, when the question of plague is considered. * * * The main object of this paper is to bring prominently before you the importance of the rat as a factor in the spread of bubonic plague in insanitary habitations. In discussing this topic, I shall reverse the usual order and ask you to hear a conclusion before I have presented the argument. I regard it as a conservative statement when I tell you that, given a filthy and insanitary environment, the rat probably many times exceeds all other factors combined in the propagation of this disease. * * *

To begin, then, it is a question whether we should regard pest as a disease of man or as a disease of rats which is readily communicable to man. It is just possible that the latter is the proper classification and that plague is primarily a disease of rats. Contrary to the general opinion, plague is a disease which progresses slowly, and only exceptionally and under circumstances with which we are none too familiar does it assume epidemic proportions. Having once gained a foothold, it plays hide-and-seek often for years, lulling its prospective victims into a false sense of security by the insidious nature of its encroachments. It is the general opinion of medical writers, however, that the city or province which harbors this infection will sooner or later be reminded in a very decided manner that the disease is not one that may be treated lightly. Whether we are able, with our present knowledge of the disease and with our improved ideas of sanitation, to prevent in the future what has inevitably resulted in the history of this disease in the past, remains to be seen. I believe that if what we know is put into practical execution, this can be done. As an example of the slow and deadly march of this disease, I have to read to you this extract from the mortuary statistics of the city of London:

In the year 1616 in London there were 9 deaths from plague; in 1617, 6 deaths; in 1618, 18 deaths; in 1619, 9 deaths; in 1620, 21 deaths; in 1621, 11 deaths; in 1622, 16 deaths; in 1623, 17 deaths; in 1624, 11 deaths; in 1625, 35,417 deaths; in 1626, 134 deaths; in 1627, 4 deaths; in 1628, 3 deaths; in 1629, 9 deaths; in 1630, 1,317 deaths.

To sum up, in a total of fifty years of plague in London, from 1601 to 1650, in twenty-five of these years the deaths numbered from 1 to 67 per annum, in eleven other years the deaths numbered from 134 to 996, while in the years 1603, 1625 and 1636 the deaths numbered respectively 36,269, 35,417 and 10,400, these being the largest numbers occurring in one year. If further evidence is wanting, I have to refer you to the number of cities that are known to be infected to-day, and remind you that nine-tenths of them are having only a few cases a month, and some of them only a few cases a year. Recognizing, then, the tortoise-like pace set by this disease, and not forgetting that it may shake off this lethargy and advance by leaps and bounds, let us consider man himself as a source of contagion. It is a common error of belief almost universal among non-medical men and even among many otherwise well-informed physicians, that plague is highly contagious. Except in the pneumonic form, which constitutes less than 5 per cent of all cases, and which differs in nowise from the bubonic type, save in the part of the body at-

* Read before the San Francisco Microscopical Society.

(This article appeared in full in The Journal April, May and June, 1904, and is such an excellent review of the subject that we here reprint a full abstract of it.—Ed.)

tacked, plague can hardly be regarded as contagious. This does not apply to the handling of the internal organs with the bare hands, as some have found to their sorrow in post-mortem examinations, but refers to contact with the exterior of the body of persons suffering from, or dead of, plague. It is a well-known saying that there is no safer place in a stricken city than a sanitary plague hospital, and this saying is literally true. The following opinions on the subject are culled from Thompson's "Treatise on Plague," and are compiled by him from the writings of men whose experience and ability are too well known to be questioned, whatever may be thought of their conclusions.

Dr. Robertson, a British medical officer in Syria in 1841, writes: In reference to the contagiousness (transmissibility) or non-contagiousness of this disease, I beg to state that the result of all my experience leads me to believe that the disease originates in local causes, and that it is not highly contagious. My firm conviction is that the plague cannot be communicated from one person to another in a pure atmosphere, even by contact, but I am not prepared to assert that, if plague patients are crowded together in confined and ill-ventilated apartments, infection will not be produced, just as in typhus.

Mr. Brant remarks: As far as my experience goes, I have been led to doubt the contagious nature of the disease, or, if contagious, it must be in a very slight degree. I have had within the sphere of my observation many cases of the most complete and extensive contact, without the disease being communicated.

Sandison, of Brussa, says: The cases are numerous in which persons escaped the disease after contact with persons seized with it, even in its most malignant form.

Clot-Bey, with his corps of French physicians, "remained in hourly contact with the infected for weeks together and with but one of them taking the distemper." The Royal Academy of Medicine of France, in 1844, after a thorough and exhaustive search in Egypt, reported: "There is not a single fact which indisputably proves the transmissibility of the plague by mere contact with the sick." The experiences of more recent writers on this subject coincide with those of the writers quoted and corroborate their views. Before leaving the subject of man as a source of contagion, it must not be forgotten that under conditions of overcrowding and poor ventilation, human cases may be of considerable importance in producing the disease in others directly. Living in houses where there is plenty of sunlight and fresh air, with proper disposal of sewage, these same human beings can come in daily contact with plague cases with comparative immunity.

Contact with infected human beings being insufficient to account for the spread of the disease, we have to inquire in what way, then, does man become infected? This much we know; living plague bacilli must be brought in contact with the human body externally or internally, and while such contact does not always produce infection, it is sufficient in many instances. Direct inoculation subcutaneously, even with the slightest abrasion, such as is not infrequently produced by the nails, would, I have no doubt, result in infection in a very large per cent. of cases, even in those who live under the most favorable hygienic conditions. The mere contact of infective material, preferably plague tissue, rubbed on the unbroken skin of the guinea pig, is sufficient to infect in perhaps 90 per cent. of trials, and, judging from the number of cases in man which certainly are infected through the skin and which present no cutaneous lesion, I have no doubt that man may be infected in the same way. Without going into details (and you may draw your own conclusions from observation and from the literature of the subject) I wish to state dogmatically that while infection does take place through the respiratory and gastro-intestinal tracts, and perhaps through the genito-urinary tract, **by far the greater number of persons are infected through the skin, either with or without a discoverable cutaneous lesion.** If this be true, then what may be the source of the bacillus and how does it reach the human body? In the pneumonic form, and in those cases where we have a **lymphangitis pestis** in the pulmonary lymphatics, the sputum is, of course, dangerous. Inasmuch as these cases are not very frequent, we are led to a discussion of "sources other than rats and human cases," rats being reserved for a separate consideration. I use the word source to mean any animal that may harbor the germ, or any material outside of the animal body that may contain living plague bacilli. The evidence here is very conflicting. Competent observers say that cats have the disease but do not die of it. * * *

Various other domestic animals have been reported as suffering from or at least harboring the germs, but the evidence is not so conclusive. * * *

It may be possible that at the height of an epidemic of plague an increased virulence of the bacillus pestis, whatever an increase in virulence may mean, does enable it to become pathogenic for most of the domestic animals. At other times, the virulence of the bacillus may be so lowered that it will not produce the disease with such readiness, if at all, as it is well known that experimentally, at least, the virulence may be so lowered that it will not even kill mice, the most susceptible of all animals. If it is true that domestic animals under certain conditions harbor the germs and transmit them to man without the animal itself becoming ill, we can readily see that this is a matter of the utmost importance, as there is nothing so deadly as an enemy in ambush. * * *

What has been said of fleas and mosquitoes will apply to flies and other vermin. Fomites have long been regarded as a source of transmission, and with apparent good reason. The theory that the plague bacillus has a saprophytic existence in the soil may be mentioned as a possibility.

We now come to the consideration of the rat in particular as a means of disseminating the germs of plague. The question often asked by sanitarians is, not whether the rat is concerned in the spread of the disease, but is he the only agency? It has already been shown that the disease may be transmitted in other ways. We have now to make out a case against the rat, and there should be no difficulty in convicting him as principal, the others being accessories. It is admitted that we are unable to state satisfactorily the way in which the germ passes from rat to man. If I should shoot a man in the street in the presence of credible witnesses, I do not think a jury would acquit me because they did not see the bullet enter his body. Competent evidence can be introduced to establish the following facts regarding rats and plague: Rat plague and human plague are identical. The spread of plague follows along the lines of migration of the rat, and not necessarily along the lines of travel of human beings, unless rats accompany them, as on board ship. Plague produces a greater mortality among rats than among human beings. Plague almost invariably attacks the rats of a city before it appears in human beings. The first cases of plague in a city nearly always occur in a vicinity where infected rats have been found.

The occurrence of epidemics of plague in man without rats infection is so rare as to throw doubt upon the accuracy of such report. In one such instance (Russia) this state of affairs is offered as an explanation of the ease with which the epidemic was controlled. For hundreds of years in districts where plague prevails, the death of rats in large

numbers has been recognized by all classes as a certain omen of impending calamity, and the advent of plague among rats was sufficient to strike terror into the inhabitants and cause them to flee from their homes. The rats themselves, after a time, become panic-stricken and, losing their usual fear of man, scatter in headlong flight from the infected locality. Rats dead of plague are often found in rooms occupied by human victims. There are numerous instances in which infection in the human being has followed the handling of rats dead of the disease. Direct inoculation has been reported in one case as follows: "A dog belonging to a patient brought into his (Mr. Hill's) bedroom a rat he had killed, and plumped it down on the bed. Mr. Hill at once threw the rat away. The dog then licked his master's hand, on which there was a slight abrasion, and plague showed itself a few days later." I shall not attempt to present in detail evidence in support of the foregoing statements. They can easily be verified by reference to the literature of the subject. A few such references will be introduced, and you may follow up the subject at your pleasure. The earliest historical note connecting rats with plague is in 1st Samuel, fifth and sixth chapters, 1400 years B. C. From Renney (1851), in his account of plague in certain cities in Arabia, we have the following: "There was no particular disorder among cattle, but the outbreak of plague was preceded and accompanied by a great mortality among the rats in their houses." From Creighton, who is quoting Planck: "In the houses of families suffering from an outbreak of plague, rats are sometimes found dead on the floor. * * * Planck has seen them himself. * * * He mentions nine villages, all of them endemic seats of plague, in which the premonitory death of rats in the infected houses was testified." The same author, quoting Baber in China (1878): "The rats are first affected; as soon as they sicken, they leave their holes in troops, and after staggering and falling over each other, drop down dead. * * * The approach of bubonic plague may often be known from the extraordinary behavior of rats who leave their holes and issue onto the floors, lose their accustomed timidity and fall dead." The same author, quoting Lowry (1882): "In nearly every house in the Chinese village of Pakhoi, where the disease broke out, the rats had been coming out of their holes and dying on the floors." In addition, White, Gilder, McAdam, Forbes, Glen, Ranken, Arnaud and others make similar statements of various epidemics.

The German Plague Commission (1899) makes the following statement: Rats generally suffer from a form of plague which occurs in man rarely, if at all, namely, plague of the intestines. When thus diseased they evacuate great quantities of plague germs. It is probable that numbers of plague cases among human beings are due to contact with the evacuations of diseased rats, e. g., in the case of the flooring thus contaminated being trodden on by the naked foot. * * * Children often infect themselves by crawling on the floor and then putting their fingers in the mouth, thus getting plague with neck buboes. * * * It has therefore been proposed to wage war against rats with traps, poisons, suffocating gases, artificially induced epidemic diseases. * * *

Cantlie makes the following observation on prophylaxis: "Seeing that rats and mice are the animals which convey plague, * * * their destruction before a threatened invasion of plague is an absolute necessity if the disease is to be averted."

Manson likens a plague-threatened city to a grate in which a fire is about to be started; the coal is the human inhabitants, the sticks of kindling are the rats and the lighted match is the plague germ.

Simond observes that epidemics of plague among rats follow a course analogous to that of the epidemic in man. The following is from Montenegro:

It may be said that the plague is a disease of rats which readily infects man. Generally, before the epidemic breaks out in a city, bodies of rats which have died of plague are found in the streets and houses. Hankin has proved that generally the first cases in a population occur precisely in those quarters in which the existence of dead bodies of rats has first been discovered, and in many cases it has been possible to demonstrate that the propagation of the epidemic from one town to another does not follow the route taken by the fugitives from the infected human population, but that taken by the rats in their flight.

Snow of Bombay established that the propagation of the plague did not follow the panic produced in the population by the human cases, but took place long after when the rats emigrated, and in the direction followed by them.

Thomson writes: Rats are more liable to pest than mankind. * * * It may be stated that plague is a disease of rats, and communicable from them to man. Generally, before an epidemic breaks out, dead rats are found in the streets and houses. At Satara, and in the infected district thereof, as at Karad in 1897, and subsequent epidemics, this was observed and commented on by the people. The first cases of plague develop precisely in those places where dead rats are first discovered, and spreads from those as foci, rather than following the routes taken by the fugitive panic-stricken inhabitants. Handling the dead bodies of rats, **in the open air,** is not dangerous; going into the warehouses or grain stores to remove them is highly dangerous and fraught with great risk, owing to the insanitary conditions of such pest centers. The fact that rats found under such conditions were pest-infected was proved repeatedly by post-mortem and bacteriological and sub-culture tests, etc.

Here we rest our case against the rat. Convicted he stands, and if you indulge me a moment longer, I would like to ask, what shall we do about it? I would like to suggest that there is one place where he should be absolutely exterminated, and that is on board ship. This is a simple matter when the vessel is empty, but the problem is not so easy of solution when the vessel is loaded. The trouble arises from the fact that if a plague-infected rat is suffocated in the bottom of the hold of a vessel, that rat cannot be removed until the cargo is discharged. Rat-guards on the lines, while it is a very important measure, do not shut out all shore rats. It is argued that it is useless to kill the rats on a vessel leaving an infected port, if you do not remove them from the vessel, an almost impossible task. I do not accept the statement that such a procedure is useless when the rats are not removed. I think the mathematical chances of infecting a port of destination are infinitely less when you have three rats in the hold of a ship dead of plague and 300 dead of suffocation, than one where you have three rats dead of plague and 300 rats that are living. In other words, I think it is a great deal better than doing nothing at all. So far as a crusade against the rats in a municipality is concerned, I think it is a very important auxiliary measure. The importance of the killing of rats in an infected city is lessened only by the many difficulties which attend such a procedure and the rapidity with which they are replaced. The pertinent question has been asked, "If plague will not exterminate rats and mice, what will?" It is probable that if all our habitations were well lighted (sunlight) and well ventilated and were otherwise in good sanitary conditions, plague would die a natural death. It is possible that if plague is allowed to fester in a filthy, overcrowded and otherwise insanitary part of a city, that after years of increase in virulence it may lose its re-

spect for even sanitary habitations, and their occupants will no longer be immune.

I shall close this paper with one other observation: Rat infection in San Francisco, while it has never been extensive, has borne a striking analogy to the infection in human beings, and plague cases occur in places where infected rats have been found; in one instance dead plague rats and a dead human victim being found in the same room.

It has been found in the application of sanitary measures in various places that poisoning rats, disinfecting, medical inspection, etc., while they are very important auxiliaries, are not nearly so effective as the tearing out of filthy habitations and the reconstruction of such buildings on good sanitary principles. This kind of work goes far toward getting rid of the rat by alteration of environment, and at the same time decreases the chances of infection from such as remain, inasmuch as the rats will seek the darker recesses of the building, and in this way will not come in contact with its human occupants nearly so frequently as they do in the close, dark rooms of many of our present buildings in Chinatown. Not only this, but it has been repeatedly noted that the danger of contracting plague from infected rats is very much lessened when the contact with the rat is in a pure atmosphere, just as it is with human cases.

REFERENCES:

1. Zieman. Journal of Tropical Medicine, Jan. 1, 1903.
2. Schilling. Journal of Tropical Medicine, Feb. 2, 1903.
3. Manson. Journal of Tropical Medicine, March 16, 1903.
4. Castellani. Journal of Tropical Medicine, June 1, 1903.
5. Editorial. Journal of Tropical Medicine, Nov. 1, 1902, and July 15, 1903.
6. Dutton. British Medical Journal, Sept. 20, 1902.
7. Manson. British Medical Journal, Sept. 19, 1903.
8. Cantlie. British Medical Journal, Sept. 26, 1903.
9. Francis. Bulletin No. 11, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.
10. Cobbold. Intestinal Parasites.
11. Thomson and Thomson. Treatise on Plague.
12. Creighton. History of Epidemics in Great Britain, vol. 1.
13. Montenegro. Bubonic Plague.

THE CONTINUANCE OF PLAGUE IN SAN FRANCISCO.*

By W. C. HASSLER, M. D., San Francisco.

On February 29th, 1904, the last verified case of bubonic plague was noted by the Department of Health. During all of the period prior to the reporting of the first case in 1900 and up to April 18, 1906, active measures were continued looking to the sanitation of the city, particularly that area then accepted as the infected section of the city, to wit: Chinatown and North Beach; and while these active measures, which included catching and poisoning of rats, from 25 to 50 of which were examined daily in the bacteriological laboratory for infection, and the spreading of chloride of lime and carbolic solution over those areas considered suspicious and dangerous, by reason of infection having existed thereon, it is but natural to assume that the fire of April 18th and days following thoroughly eradicated any foci that remained hidden in these sections or adjacent areas and that the city might have reason to believe it had eliminated bubonic plague from its midst.

A review of the situation will, however, immediately present proofs that this city can never assume that it will remain free of infection so long as the disease exists in foreign ports, which have communication by steamship and other transportation facilities with the city and said places.

The question of interest, however, at the present time, centers upon the continuance of plague in San Francisco, excepting only that interval that occurred between 1904 and May 27, 1907, and the fact to be established is: was the infection dormant during the period of this time or was the city really clean and free of the disease; and was it reinfected from outside sources, which may have been from one or two points?

To consider the first proposition, we know that the bacillis pestis, in favorable soil, will remain active for many months; it having been stated by some writers and investigators to be many years. Had not that portion of the city where the infection originated been totally destroyed, the present epidemic might be attributed to reinfection from internal foci; but the fact that no case had occurred for so long a period of time and that the infection was not found in the hundreds of rats examined during the period, it would seem that the source of the recurrence must be looked for among the outside factors, which are two-fold.

Infection might occur at any time from rats brought to this port by foreign ships, infecting those rats that find their habitat along the water front. Secondly, the infection may have come from the bay counties adjacent to San Francisco which had not observed the sanitary precautions that San Francisco had and which were never entirely free from the disease or its menace to further spread; as was instanced in the case of the boy infected with bubonic plague, unquestionably contracted by having been bitten by a wounded squirrel, shot by him while hunting in the Contra Costa hills.

Infected rats would find it easy to travel back to San Francisco from those points along the eastern shores of the bay by means of the vessels receiving and discharging cargo between the respective points. Or, it would be possible to infect the river boats and tugs plying between San Francisco and other bay points, which in due time would become foci for the distribution of the shore rats to San Francisco.

This is but one aspect of the infection from the bay counties. It is quite possible that San Francisco was reinfected from points further distant, as the history of the first case noted in 1907 would indicate, to wit: Oscar Tomie, a sailor on the steam tug "Wizard," which plied between San Francisco,

* Read before the California Academy of Medicine, November, 1907.

Mendocino County and as far south as San Luis Obispo.

Oscar Tomie had been regularly employed on this vessel for some six weeks prior to his illness and had not left the vessel until May 27th, when he was taken to the Marine Hospital, after having passed one night on shore, prior to his going to the hospital, where he died two days later of bubonic plague.

The vessel during this period was on a trip north and foundered before arriving at her destination; hence it is impossible to say, definitely, whether infected rats existed upon her.

The crew of the ill-fated vessel arrived in San Francisco some weeks later, all in a healthy and normal state, but had nothing of their effects except the clothes they had on at the time the vessel sank.

The "Wizard" had been tied alongside of a vessel that had arrived from Hilo, Japan, a few weeks prior to the sickness of the sailor Tomie, and as plague existed in Honolulu at the time, it is as probable that this vessel was infected by rats from the Hilo ship, as it is that the vessel was infected by local bay rats.

All of the foregoing are problems to be considered in the analysis of the present situation, it being an established and recognized fact that bubonic plague is spread principally to uninfected areas by means of the rat.

The present epidemic had its original focus adjacent to the water front, and that isolated foci are scattered over the city irrespective of location, class of residence, soil and character of individual is not a peculiarity of the epidemic, but a necessary result of virulent infection brought to a particular locality, and the sooner this fact is established and recognized the better it will be for the general welfare of the inhabitants of this city.

I say this because of the indifference manifested by the hundreds of individuals; even in the ranks of our own profession we still find doubters that plague exists and optimists that claim plague will never attack the white race of this city by reason of our trade winds, particularly favorable location, etc.

The original nidus is, or has enlarged to the extent that its scope now extends over the entire bay frontage and a goodly portion of the central part of the city, with a fair promise of spreading to the extreme limits of the county.

At the original foci we find upon close survey the following conditions: First, a class of people while in the main clean and given to much scrubbing and washing, on the other hand ignore all laws of hygiene regarding ventilation and cubic air space in their sleeping apartments. This class is in part the same that existed in this locality prior to the fire, but differ from the type who lived here in former days, and is distinctively higher class than usually characterizes water front inhabitants, or what might be construed by the use of the term "Water Front." They are generally careless in the disposal of their waste and refuse; being rather inclined to accumulate and hoard all manner of garbage pickings, which in part is utilized to feed the goat, chickens and other fowl kept by them, and in part disposed of as junk.

In addition to this we have a sandy surface soil that will vary in depth from 6 inches to many feet before an impervious layer of clay is reached and which in the main is dry and forms an ideal incubator for the hatching and propagation of fleas and other vermin, which are the intermediate host between the rat and the human.

Owing to the complete destruction wrought in the city in 1906, there resulted, generally speaking, two things: first, an almost complete reversal in the manner of living among those deprived of homes. Shacks, tents and nondescript houses sprang up singly and in groups like mushrooms on a dunghill. The latrine replaced the former toilet that had sewer connections, and in hundreds of instances the latrine was even lacking, night soil and discharges being thrown on the surface ground because the requisite manual labor necessary to construct a latrine was considered a waste of time and energy; garbage and kitchen waste was disposed of by burial, or more likely by dumping on to some neighbor's property, or if not, into the public street or corner cesspool.

With this, the individual sanitation fell so far below par that it was or should be placed at zero in the scale. This was due to the difficulty or inconvenience in obtaining water; for, I believe, that no matter how low the individual is rated, if running water is at hand he will use it, but will in no wise allow his equanimity to be disturbed by dirt if its removal costs more than a few yards' walk, and what holds true of individuals, is likewise applicable to groups.

Next to be considered is the primary host, "the rat." It has been remarked by many that the great fire destroyed thousands of rats. This is no doubt true, but those whose duty it was to work on the fire line will bear witness to the fact that as the fire spread it was preceded by an army of rats, which with almost human perception recognized the danger and fled to the zone beyond.

Unquestionably, many perished in the walls of buildings or in the merchandise contained therein, but the ratio of death is low compared to the numbers then existing.

The sequence of this was an overcrowding of the new sections of the city that already had their quota of rats, for it may be taken as a fact that every part of any city will always have just as many rats as that section can supply food for, minus the number destroyed by poison, trap or other means by the the residents thereof.

In this migration, was there a transmission of infection from the lower section of the city? This is a debatable question that might be argued pro and con and which will be left open for discussion, bearing in mind the fact that it was 25 months after the fire that we registered our first death from plague.

In connection with this, I present a factor, to wit: plague is often passed unrecognized by the general

practitioner. This is particularly true of the pneumonic types and a review of the vital statistics for the year May 29th, 1906, to May 29th, 1907, shows that there were in all 748 deaths from pneumonia, only 463 of which were reported prior to death by physicians. The death certificates show that these cases ran an extremely short course and that the majority occurred among the lower classes. This may or may not be looked upon with suspicion in view of later developments.

These two points, to wit: the possibility of the old infection being transmitted into the new section of the city and that many of the cases passed unrecognized prior to May 27th, will be left to debate for final settlement and another aspect of the situation be given for your consideration; namely, the rat driven from its original haunt into the new section of the city was, by force of natural instinct and circumstances, desirous of a return to its original haunts on the abatement of the causes that had driven him out, to wit: the earthquake and fire.

Here, by reason of the lack of vigilance on the part of the authorities in permitting foreign vessels to dock without the safeguards, namely, ratguards and fenders, or perhaps by contact with infection from rats of local bay points, they became infected with the bacillis pestis.

Food being scarce and the conditions generally greatly disturbed, it was but natural for the rat to return, if only as a visitor, to the section where he had been temporarily housed, and found convenient pickings and safe harboring place beneath the wooden floors of the hundreds of small and unsanitary stables that exist in the area contiguous to the burnt district, leaving perhaps his dead body or transmitting the infection to the rodents of the locality, which in turn are carrying this infection from one point to another over the entire city.

Coincident with the present outbreak, the city has been suffering from an epidemic of fleas. While this pest is always with us, it has been exceptionally numerous during the last summer, and as it is principally through this medium that plague is transmitted to the human, it therefore is second only in importance to the rat which is the primary host.

From experimental sources we believe that the bacillis pestis remains active in the flea for about 7 days. Whether it is transmitted from one flea to the other has not been entirely proven, but positive proof exists of the transmission from rat to flea and from flea to human.

This epidemic of fleas may be accounted for in various ways. First, there was an unusual amount of dust and dirt distributed over the city in the process of cleaning away the debris and ruins. Second, streets and sidewalks were for months unswept. Third, there was an overcrowding of the new business and residence section, which as a result did not have the conveniences or the time requisite for the usual thorough cleansing. Fourth, the public conveyances and street cars were likewise overcrowded and dirty, which, with the changed conditions of living, created a condition favorable to the hatching and propagation of fleas.

What influence all such conditions have on the spread of the infection, though problematical, should not be lost sight of in the analysis of this situation nor in the ultimate sanitation thereof. The consideration of this latter, when all is said and done, remains as the most important in the eyes of the layman.

The plan at present energetically carried on is unquestionably the right one and if our citizens can be duly impressed with the seriousness of the menace and the necessity for their response and help in the sanitation of individual premises and the fight against the rat and the flea, it can be but a question of months when this peninsult will be entitled to a clean bill of health.

In this work none can aid as much as the family physician or medical adviser, if he will but consider it a part of his professional duty to his patients.

The slogan of this campaign is "THE RAT MUST GO!" This is accomplished first by destroying his home; second, by cutting off his food supply, and third, by poisoning and catching him if he still finds a lodging place or persists in remaining in the neighborhood.

The Board of Health is actively engaged in the destruction of his home by the condemnation of all stables having wooden floors and improperly constructed manure and feed bins. But this procedure is slow and cumbersome under the existing laws, and to overcome this an ordinance is about to be proposed that covers this detail and which if passed will remedy the evil now existing in stables.

The second measure spoken of, to wit: cutting off the food supply, is perhaps the most important, for even with a home, the rat must starve or leave the locality if it cannot obtain food, and in a city situated as San Francisco, this should be a municipal problem and so regulated that the burden of cost and removal of garbage, which is the natural food of the rat, be taken care of by the city instead of the manner at present employed.

This problem could be very easily solved by placing the burden of removal of house refuse and garbage upon the property owner and not upon the tenant. In fact, the cleaning of the streets and the removing of garbage, refuse and manure should be under the jurisdiction of either the Board of Works or Board of Health. This would insure getting all of the garbage and waste and would produce a state of cleanliness not obtainable under existing conditions. For the adoption of such a plan every physician should lend his aid and influence.

Next in importance to the eradication of the rat is the obliteration of the refugee cottage, an evil which will cost the city many thousands of dollars before it is rooted out. That section of North Beach, with all the contiguous area, is especially menaced by these cottages, and with the notorious favorable surface soil for the hatching of fleas, the lack of general sanitary conveniences makes this our most important field for work. The cottages should

be routed out, and especially should this apply to the section from Presidio to the Park between 13th and 14th avenues, Lobos Square and Telegraph Hill vicinities, where they should be vacated, destroyed and grass plots made of the surface areas.

The installing of a salt water system would insure us not only against fire, for which it would be primarily intended, but afford an abundant supply of water for the sprinkling of streets and the flushing of sewers.

AMPUTATION BELOW THE KNEE JOINT.

By ANDREW M. HENDERSON, M. D., Sacramento.

Although the technic of amputation is well understood and the performance of the operation is generally considered simple, none the less the results vary so greatly that we cannot but feel that there is good reason for giving some time to consideration of the various details. This operation does not always come to the surgical specialist. The occasional operator or physician less accustomed to operative technic may find himself forced to perform the operation and under circumstances far from favorable for obtaining ideal results. Unless he is mindful of the essential points in the detail of the technic, he is quite likely to realize some of the difficulties of the procedure before the patient obtains a satisfactory artificial limb.

The first aid given to patients suffering from injuries which are likely to result in amputation is a very important factor in the result. The limb is quite likely to have dirt and gravel ground into the soft parts. The soft parts are contused and lacerated, a condition most favorable for accepting the infection to which they are greatly exposed. The limb should be bared and cleaned as well as the circumstances will permit. A moist antiseptic dressing should then be applied, to serve as a protective dressing as well as to render the exposed parts sterile. To control hemorrhage, unnecessary force must not be used. Frequently a compress applied without great force may be sufficient. If a vessel is exposed it should be clamped to check the flow of blood.

It may be necessary to apply greater force in such a manner as by application of a tourniquet. When such is the case the attendant must use some judgment as to the location of the tourniquet. The force should be applied as near to the extremity as possible, and should be no greater than is necessary to control the bleeding. These suggestions might seem unnecessary were I not to explain that during the last two years I have seen several cases brought to the hospital without any effort having been made to cleanse the injured parts, but with a tourniquet bound tightly around the limb at the site to be chosen for amputation. It is not uncommon to have these patients enter the hospital crazed by alcohol, as much as a quart bottle of whisky having been given to the patient in transit to the hospital. A patient in such a condition is not a fit subject to be given an anesthetic, nor is he capable of listening to reason relative to the procedure to be undertaken. When alcohol is given it should be within reasonable limit. Strychnin is a better stimulant, and morphin a better anodyn. The decision as to final course of treatment is frequently very difficult. There has been considerable discussion as to the propriety of the different amputations of or through the foot.

Every surgeon has at some time questioned the propriety of sacrificing so great a part of the limb when it might seem that an amputation through the foot might suffice. It is not to be wondered that the patient opposes such advice.

C. B. Clapp, of Moberly, Mo., has recently reported the replies of 96 surgeons and 35 limb makers to questions as to the advisability of making various amputations through the foot, and as to the ability of the limb makers to provide artificial limbs for such stumps. A considerable majority, both of surgeons and of limb makers, advised the Lisfranc operation when such is possible; however, a very respectable minority opposes even this operation. The Chopart, Pirogoff, Symes and the operations through the foot were advised against by a large majority of surgeons as well as limb makers, because of the inability of the stump to bear the weight of the body and the impracticability of adjusting a useful artificial limb. In answer to the question as to the selection of site for amputation when the foot must be sacrificed, most of the surgeons and all of the limb makers advised a point from 8 to 9 inches below the lower border of the patella. In questioning men wearing artificial limbs, I have generally found those best satisfied whose limbs have been amputated at this point.

In a case where the foot is crushed and the tissues of the upper part of the leg are not bruised, it becomes possible for us to select the method of operation. The preliminary preparation of the limb should be of the most careful character. It should be washed thoroughly and the hair should be carefully shaved, and where it is impossible to cleanse the distal part thoroughly, it should be wrapped in sterilized cloths so as to prevent the soiling of the cleansed portion. I note this especially because of the tendency to hasten the preparation of the limb for amputation.

The tourniquet should be applied above the knee joint and kept in position until the flaps are adjusted, and such vessels as are easily located have been taken up. Under such circumstances we would advise the use of the long anterior and short posterior flap method, cutting the skin flap from without inward through the muscle to the bone, holding the knife in an oblique position so that the thinnest part of the muscular flap is nearer to the skin incision. It is well to make a periosteum flap, but it is useless to do so unless some of the muscular tissue is retained with the periosteum as the periosteum receives its blood supply from the muscular tissue. Having elevated the periosteum and retracted the muscles by means of the three tailed muslin retractor or similar device, the fibula is divided

first, at a point one-half to one inch above the site for dividing the tibia. In order to round off the tibia it is well to make an oblique section along the anterior ridge of the tibia, to remove the new, and then re-enter the saw perpendicular to the axis of the tibia. It may be well to place a few sutures in the periosteum flaps, and also to bring the muscles together by means of sutures so as to destroy the dead space. Nerves and tendons should be drawn down as far as possible. Cut so that the veins will not be caught in the scar. When properly cut, the skin flaps adjust themselves easily. For closing skin wounds we would use a few silk worm gut sutures and make a fine adjustment by means of horsehair. The stump resulting from this amputation is regular in outline, the scar is narrow and clean, and it is behind the bone and receives none of the pressure.

An ideal closure may be made without drainage, but it is so difficult to check all of the oozing that it is generally well at least to place a piece of drainage tube at each of the lower angles of the wound. A little extra time cannot be spent to better advantage than in controlling the bleeding on the stumps, as secondary hemorrhage is quite likely to destroy the stump, or at least necessitate the opening of the wound and make the condition very embarrassing. The limb should be placed on a long post splint, care being exercised to avoid pressure on the wound. It is not always possible to select the method of operating, the soft parts being injured to such an extent that economy must be practiced in the adjustment of the flaps. In such cases it is of first importance to divide the bone at such a point that we may have ample flap for covering.

Unless we have ample skin for covering, we are quite likely to find that the skin will be drawn upon in several points at least, and if the whole flap does not slough, part of it will, which will be difficult to heal and will leave tender spots in the stump.

REPLACING OF BONE AND CARTILAGE OF THE SEPTUM AFTER ITS SUBMUCOUS RESECTION.*

By EDWARD CECIL SEWALL, M. D., San Francisco.

In nasal surgery few conditions have received more attention than the deviated septum. The correction of this deformity, so often of such importance to the wellbeing of the patient, has been done in almost every conceivable way. I do not wish to go over the situation as it has stood in the past or as it stands to-day. Suffice it to say that we have a method, the submucous resection of the septum, that is familiar to us all, and one that gives results. Although a comparatively new operation when considered in its entirety, it has been used in a marvelous number of cases. Many able papers have been published describing it in detail and though the technique differs some in different hands, the principle of removing the offending deviated or thickened portions of the septum, whether cartilage or bone, at the anterior nares or near the choanae, is the same.

Personally I follow Professor Killian's method in making the single, slightly backward curving incision, and use his simple and effective armamentorium. Anaesthesia is produced by the submucous injection of cocaine and adrenalin—using the small tablets prepared by Parke, Davis & Co. The injected fluid not only gives us the effect of the drugs most effectively but we gain a mechanical advantage, as it raises the mucous membrane. The operation is made much more difficult when done under general narcosis. The hemorrhage then is hard to control and delays the operation.

Although the operation has met with almost universal favor, there have been objections raised which must be carefully considered. The point that strikes one first is the possibility of the sinking of the dorsum of the nose. This objection has been pretty well disposed of because of the very few such instances which have occurred in a great number of operations. As great conservatism as expedient is observed in removing the deflected parts.

However, the permanent removal of so much of the septum is a disadvantage if we can accomplish the desired results without so doing. This wish to preserve these healthy though misshapen parts has led me in the past nine months to try to replace as much of the septum as advisable after I have previously removed it.

Cases where the parts are to be replaced must be selected carefully, for in narrow noses we wish the septum to be left as thin as possible. However, there are many cases where after the septum is straightened, there is ample room for one of normal thickness.

After removal of the cartilage, which is done in one piece by Ballinger's knife, the bony parts are resected in as large pieces as advisable. They are kept in a sterile pan not touched or washed. When the operation is finished they are trimmed where necessary to make them straight; also to make them lie flat, and packed, the bony pieces first, carefully into the space between the mucous membrane. The raw surface of the mucous membrane on the uncut side is usually moist enough to hold them in place until all are adjusted, and the opposite membranous wall allowed to close down on them.

The nose is then packed firmly on both sides to prevent hemorrhage and hold the parts in the desired position. The packing is removed on the following day.

Since last September, I have selected seven cases where it seemed advisable to replace the parts. In none of these cases have I had any infection or untoward symptoms. The resulting septum was as straight as when the parts were not replaced. Two of these cases I have observed in the past few days. Of these cases, one shows practically a reconstruction of the structure of the septum. It is firm both to touch of probe and pressure of finger. It appears quite as firm as a normal septum. It lies in the medium line and allows the patient ample breathing space. There is no question in this case that the firmness of the septum is due to the replaced bone and cartilage.

In the other case recently observed, the septum also shows very clearly the support of the underlying bone and cartilage. By placing the thumb and finger into the nares, the thickness and resilience of the cartilage can be distinctly felt. The anterior bit of cartilage which was not removed is made out, and on tracing it backward to the line of the incision, it is felt to join firmly with a large piece of cartilage, which is joined firmly in its turn with the bony structures below, above and behind. Below these, at their anterior part, there is a small area where the mucous membrane is quite loose, showing total absence of cartilage, or support.

The problem of regeneration of bony and cartilagenous parts resected is an interesting one. To quote from Dr. C. M. Hurd's article in the Journal of the American Medical Association, Vol. XLVIII, page

* Read before the Section on Ophthal, Otol, etc., of the State Medical Society meeting at Del Monte, April, 1907.

115:—"The question now arises, do the cartilage and bone regenerate?" "They do not," he says emphatically. "After a period of from one to two years I have examined most of my old cases and have found the septum flaccid to the slightest touch of the probe. From one patient of fourteen, I removed a section and submitted to microscopic examination, and found only two muco-perichondria with a small amount of fibrous tissue between them." Dr. Freer, however, in his discussions of this same paper says he is not sure that such regeneration does not take place. He calls attention to certain cases seen by him some time after operation where he was fairly certain that there was greater firmness to the septum than would be given by the periosteum and perichondrum alone. However, there is so far as I know, no positive microscopical evidence on this subject. Personally, I have examined a number of such septa long after operation and though they were straight and functionating perfectly they certainly lacked underlying support of bone or cartilage. What is more, in the cases where I did replace a considerable part of the septum, the membrane was quite lax in other parts, showing that these replaced pieces had not proliferated, and completed the frame work.

It is a mooted question whether cartilage ever regenerates except from its perichondrium. To quote Ziegler, "Regenerative growth of cartilage after lesion either does not take place at all or in such insignificant proportions as to be without practical importance. On the other hand, new tissue is built up from the perichondrium."

Dr. M. Mutsucka, in Virchow's Archive for 1904, has an interesting article in which he has quoted the ablest opinion up to that time and there was difference in them as to the above question. Fedfer, Legros, and Gudden saw the cartilage regenerating by a division of the cartilage cells. Gussenbauer, Schwalbe, and Sieveking came to the conclusion that only the perichondrium took part in the regeneration. We would not then expect any material aid in the regenerative process from the regeneration in the replaced parts. The question has arisen as to whether on these bony or cartilagenous parts, replaced new tissue would be lain, thus leading to increase in the thickness of the septum. The surfaces lying next the periostium or perichondium are smooth and praetically uninjured, and I do not believe there is new cartilage or bone deposited there. The results after nine months do not show any such condition.

REPORT OF CASES OF HEAD INJURY.*

By O. D. HAMLIN, M. D., Oakland.

In presenting this report of cases, the question of diagnosis and treatment will be mainly dealt with, in that the diagnosis and treatment of intracranial disturbances depends on a thorough and practical knowledge of the physiological functions and the anatomical locations of nerve centers.

Traumatic injuries of the head and diagnosis of same may cover symptoms of one or more conditions, such as concussion, laceration of brain tissue, compression of brain, extradural hemorrhage and subarachnoid serous exudate. Concussion and contusion of the brain associated with minute bruising of brain tissue will exist after all serious injuries of the skull.

The symptoms of concussion are varied according to the severity of the injury. Following slight concussion, the individual is stunned. There may be only a simple vertigo, or possibly mental confusion lasting but a short time. After a severe concussion there will follow a period of unconsciousness of a longer duration, the duration of unconsciousness depending upon the amount of injury to brain tissue. The sphincters may be relaxed and consequent involuntary micturition and defecation. The pulse will become slow and feeble along with the general systemic depression. The pupils still react to light. The temperature may be subnormal. It is impossible clinically to distinguish between concussion and contusion of the brain.

In serious laceration of brain tissue the symptoms of concussion may be present to a marked degree and will be characterized by immediate, pronounced and long-continued unconsciousness, often overlapping into unconsciousness produced by intracranial hemorrhage; moreover, in laceration of brain tissue, after recovery from the initial shock, fever may be present, which may rise to 103 or 104. Concussion alone is never associated with fever. Early fever is always the sign of laceration or lesions other than concussion. Mental irritability and restlessness will mark returning consciousness. Slight hemorrhages do not give us symptoms of compression, neither do slight depressions of cranial bones. In one case called to my attention, in which there existed hemorrhage from the middle meningeal and compression of the bony vault, no symptoms of compression were caused and patient was about for six days. Before symptoms of compression appear the cranial contents must be impinged upon to a very considerable extent. In extradural hemorrhage the most important symptom of traumatic intracranial hemorrhage is the interval of consciousness that exists from the time of the injury to the onset of unconsciousness. This period of consciousness may be preceded by the temporary or prolonged unconsciousness of concussion. In my opinion, in cases of hemorrhage which occur without an interval of consciousness, unconsciousness coming on immediately upon receipt of the injury, it must be that the injury is so severe that the unconsciousness caused by the concussion and laceration of the brain is continuous with the unconsciousness from hemorrhage. Therefore, with unconsciousness of long duration, when the temperature begins to rise, the pulse becomes slow and full, stertorous breathing sets in, the face is flushed and there is loss of reaction of the pupils and signs of paralysis of the upper motor centers or special senses, we must consider that the unconsciousness of concussion is continued over into the coma of compression. The sources of intracranial hemorrhage, whether from the middle meningeal or the middle cerebral, the veins of the pia mater, from the sinuses of the brain or from the lacerated brain tissue, can not be easily differentiated short of operative procedure. There is one condition not to be overlooked in connection with the question of hemorrhage, namely, the period of semi-consciousness,

*Read at the Thirty-seventh Annual Meeting of the State Society at Del Monte, April, 1907.

which sometimes follows concussion and laceration and gives rise to the suspicion of some more serious lesion.

For instance, J. G., aged 38, struck by one electric car while riding on the step of another, when seen at the hospital one-half hour later, was unconscious. There were no evidences of hemorrhage, no convulsive movements, no deviation of the eyes and no disturbances of the pupils; breathing was regular and normal and there were no disturbances in sensation or reflexes. Two hours later, the patient became partly conscious, knew his partner and recognized him sufficiently to tell where the key of the safe was. Twelve hours later and after a few hours' sleep, he became unconscious and symptoms of paralysis developed on his left side. In this case it may be seen that a period of nearly twelve hours' consciousness followed by unconsciousness might have been varied by a longer period of unconsciousness from concussion or the hemorrhage appearing earlier.

In fractures of the base of the skull, it is not uncommon to discover that what in the vault appears to be a simple fissure continues down to and involves the base of the skull. Fractures of the base of the skull are, however, regarded as more serious than those of the vault, because the cerebral disturbance is more pronounced, vital parts are endangered, and these fractures open into cavities which it is impossible to keep surgically clean. Danger of septic infection in such fractures is very great. According to McEwen, about 85% of basic fractures originate in the vault—that is, are caused by an extension of a linear fracture of the vault to the base.

In fracture of the base, hemorrhage may take place from the ear, from the mouth, from the nose or under the conjunctiva. Escape of cerebro-spinal fluid may be noticed from the nose or ear. In diagnosis of fractures of the skull, the signs usually present in fractures elsewhere are not available for diagnostic purposes. The hemorrhage is frequently so distinctly circumscribed as to mislead one to mistake the unresisting soft area which solidly defines margins for a depressed or even penetrating fracture. Hemorrhage from the ears may occur from other causes, such as injuries to the external auditory canal. When hemorrhage exists from the nose or ear, it may be accompanied by cerebro-spinal fluid and if collected, the presence of sugar may be demonstrated. It is also characterized by an extremely small amount of albumen and a relatively large amount of sodium chloride.

The differentiation between concussion and compression are fairly clear. In the case of concussion, the invasion is sudden, while in compression, it is usually slow. In concussion, the pulse may be slow and likewise feeble, while in compression, the lessened pulse rate is not marked by a corresponding diminution of force. In concussion, the pallor of the surface is marked, while in compression, the natural color is maintained. The respiratory act in concussion is not affected, while in compression the vagus center is often most decidedly affected. In concussion, the pupils respond to light though they may be unevenly contracted, while in compression, they are fixed, usually dilated and do not respond to light. Unconsciousness is common to both conditions, except in concussion unconsciousness is immediate, in compression later, unless one condition overlapses the other. Should symptoms of concussion persist, however, beyond those of the simple and temporary stun, artificial heat or administration of hot alcoholic drinks by the mouth, if the patient can swallow, otherwise by the rectum, inhalations of aqua ammonia or injection of 1/100 gr. of atropin to increase arterial pressure, or inhalation of nitrate of amyl to lessen the resistance of blood through the smaller vessels and capillaries. Under no circumstances should ice or cold water be applied to the head during this stage. As soon as re-action is established, all stimulating measures should be abandoned. With excessive re-action, the new line of treatment is indicated. Fullness of the cerebral vessels are indicated by a flushed face. Congestion of the conjunctiva and throbbing of the temples is to be met with the application of ice and cold compresses, at the same time the administration of active cathartics to lower blood pressure.

The treatment of compression of the brain depends upon its causes. The cause being removed, the brain usually recovers its functions, if its nutrition has not been disturbed. As a rule, ligation of small vessels causing hemorrhage of the brain is not necessary. Should it persist, however, the removal of a sufficient amount of bone to enable the vessel to be reached will be indicated and may be rapidly affected with Keen's gouge forceps, as the removal of bone even in the linear form causes very little callus during the process of repair. This is ascribed to the immobility of the fragments and subsequent very slight irritation present. This also explains the usual but not constant absence of symptoms of cerebral irritation, such as follow the presence of deposits of new bone in the inner surface of the cranial bones. Cases, however, occur in which disturbances of function result from the formation of bony deposits in this location and operative procedures are necessary for the relief of these. Complete regeneration following the loss of bone, either from accidental injury or from the use of the trephine, almost never occurs. The dura mater here assumes the function of a periosteum to a minor extent, as shown by the fact that excessive formation of callus, under these circumstances, is almost unknown.

The question of how to lower blood pressure during operations on the head has been a very broad one and has been very widely discussed. Bleeding has been suggested, sitting the patient in an upright position has been suggested, and recently Dr. Robert H. M. Dawbarn of New York has written an article entitled "Sequestration Anæmia in Brain and Skull Surgery."[1] His method is as follows: Tourni-

1. In the February, 1907, number of "Annals of Surgery."

quets are placed around each thigh and arm close to the trunk, a towel being placed under the tourniquet to cause pressure of a wider area. It must nearly stop the venous but not the arterial current. In this way the patient is bled into his own limbs. Dr. Dawbarn, in his paper, states the danger of prolonging the use of this tourniquet during this operation.

Case I. W. C., injured August 18, 1906. Seen at hospital at 1:45 p. m. Temperature 99.4. Pulse 80. Injured about 8 p. m. the day previous, August 17th. Contusion and laceration of scalp above right ear about two inches in diameter. Patient had been up and around during the day of August 18th, but was rendered unconscious for about two hours after injury on August 17th, which occurred from being hit by switch engine at railroad yards. Pupils equal and reacted to light. Respiration normal. Heart action regular. Pulse full. Examination of injury showed slight laceration of scalp over right ear and great tenderness on pressure and a large bulging mass about two inches in diameter containing fluid. Horseshoe-shaped incision of scalp revealed a large hematoma and several loose fragments of temporal bone. On removal of depressed fragments a very profuse hemorrhage followed. Loose fragments were quickly cleared away and a large extradural clot found. On examination of dura no normal pulsation could be seen. Dura was opened and considerable effusion relieved, after which normal pulsation returned. Sharp edges of bone were carefully removed and plain gauze packing used as dressing. Following day, temperature 100; pulse 80. Patient dressed every day. One drainage strip was not removed until four days later, and then partially replaced to give additional drainage if necessary. Patient discharged from hospital September 1, 1906.

Case II. E. C., Spaniard, aged 42. Examined at hospital November 13, 1906. Was struck by street car while crossing track three days before. History showed that patient remained unconscious two and one-half hours, later returned home and was up and about, did not feel well, complained of dizzy spells and pain in left side of head when seen at hospital. Examination of head showed tenderness and bulging in left frontal region. Pulse 120. Patient was prepared for exploratory incision. Horseshoe-shaped incision was made over left frontal region. A large hematoma of scalp and linear fracture running through left frontal bone was found. Small trephine was used in line of fracture and opening enlarged by use of Keen's gouge and de Vilbus used along line of fracture. A large extradural clot was removed from under line of fracture about one and one-half inches in diameter and about one-half inch thick. Dura was exposed and did not pulsate. Dura opened and considerable serus exudate relieved. Clot and exudate were removed, wound was dressed with plain gauze and drained. Patient lifted in bed to an angle of forty-five degrees for the purpose of lowering blood pressure. Two days later the patient's temperature was 99, pulse 80 and condition generally good. Three days later temperature was normal, pulse 70. Three weeks later, patient was discharged.

Some points in this case to which I desire to call attention are the use of the de Vilbus forceps, the presence of a cerebral exudate under clots, and the position of the patient in the after-treatment.

It is easy, by running the small de Vilbus blade along a linear fracture, to rapidly open the skull for exploratory purpose and reveal a clot or point of maximal hemorrhage, and determine quickly the necessity for or point of application of the trephine. This procedure may be carried out over any part of the brain surface without injuring sinuses or brain tissue.

When, after an extradural clot has been removed, the pulsation of the dura does not return, a sub-dural cerebral exudate is usually present and an opening to remove this exudate has not, in my experience, been followed by any serious results, unless laceration of brain tissue existed and bulged through opening in the dura. If there is danger of this complication, the patient should be carefully watched and on occurrence of a hernia cerebri appropriate treatment should be adopted.

In the treatment of injuries of the head, position is a very important factor. In concussion or other condition in which cerebral anæmia exists, the head must be low, but otherwise the head must be raised after the effects of the anesthetic have passed off, in order to lessen the tendency to hemorrhage and exosmosis due to engorgement of the cerebral vessels.

Case III. F. M., injured May 11, 1906. Inventor, aged 23 years. Fell from a buggy. When seen one hour later at hospital, fracture of lower jaw on both sides at angles. Patient unconscious. Pupils reacted to light and were equal. No manifestation of motor disturbance. Patient restless. Temperature 95; pulse 40. No evidence of cerebral hemorrhage. Stimulation treatment instituted. No attempt made to wire or reset jaws, as patient was not in condition to stand an anaesthetic. Temporary dental splints and chin bandage with large hole in center of dental splint for feeding patient used with expectation of adjusting permanent splint after patient's condition improved. At midnight on May 11th patient's condition still remained the same. Patient would take nourishment. Bowels well emptied by enema and urine drawn by catheter. Next day, the 12th, no change in physical or mental condition; temperature 96, pulse 52. At 11 o'clock, on May 12th, temperature 99, pulse 62. Patient more comatose. The next day, May 13th, at 11 o'clock, patient decidedly comatose; temperature 101, pulse 68. Patient generally in a dying condition. Patient died at 3 p. m. Temperature, just before death, 102. This patient's temperature at this time was probably due to compound comminuted fracture of the jaw, with possible infection or absorption, as tissues about fracture were severely contused and lacerated.

Autopsy showed no fracture of skull and no cerebral hemorrhage, but there was extensive generalized congestion of brain tissue, and excessive exudate into the ventricles, especially the fourth.

Case IV. M. A., Italian, November 22, 1906. Residence, Niles. Brought to me by Dr. Morrison. Examination showed equal pupils, which reacted to light. Temperature 102. Pulse 126. Respiration 38. Paralysis of right side, right arm and leg and speech. Struck, night of November 21st, about 10 p. m., on right side of head, with bottle. History shows that patient returned home three miles from Niles in his own buggy, driven by himself, unhitched his horse, put his wagon in the shed and entered his house (it was then about 11:45 p. m.), sat at the table with his wife, told her of a row with a certain man and suddenly stopped speaking. Dr. Morrison was sent for and gave him treatment during that night. Next afternoon Dr. Morrison brought the patient to Oakland and placed him under my care. Exploratory incision was made over point of injury on right side, but no depressed fracture found. Incision was carried over to left side of head, where fracture extended across the top of the vault and over the fissure of Rolando. The opening was made through

the bone over the fissure of Rolando and a large clot in the fissure exposed. The reason for the right-sided paralysis was thus evident. Clot was removed and immediately on recovering from the anaesthetic patient's leg was relieved of its paralysis. Hand and voice still remained paralyzed. Later speech greatly improved, but condition of hand was unchanged. Brain tissue being greatly disorganized from pressure of clot, of which three and a half to four ounces were removed, patient lived several weeks, but gradually became weaker and died.

Autopsy showed disorganization of brain tissue and general cerebritis.

Case V. Mrs. G. B., aged 30 years, housewife. Injured in street car accident. Seen two hours after accident in hospital. Examination revealed severe abrasion over left side of face and swelling and abrasion over left side of forehead and fracture of the acromial process of left shoulder. Patient partly unconscious. Pupils equal; react to light. Rectal temperature 96. Pulse 94. Incision across scalp revealed a linear fracture running anterior posteriorly through left side of frontal bone. Fracture seemingly very slight, no displacement of bones, no evidence of hemorrhage. Scalp wound sewed up and patient put to bed and observed closely for further symptoms. Next day, September 27th, patient very restless; partly conscious. Pupils equal; react well to light. No evidence of motor disturbance. September 28th, patient still very restless and partly conscious. Temperature 100 2-5. Pulse 100. Patient took liquid nourishment. September 28th, patient's condition about the same, but more evidence of consciousness. Pulse stronger. Recognized members of family. Patient's mental condition gradually but slowly improved from this time. Slight purgation and ice cap at this time, as the flushed condition of the patient's face, together with character of pulse, showed evidence of rise of cerebral blood pressure. At no time was there evidence of motor disturbance. The slow but gradual improvement in the mental condition kept up, and the patient left hospital November 4, 1905, with mental condition good, but very nervous and weak.

The interesting point in this case was the difficulty that arose in the diagnosis of the fracture of the acromial process in a partially unconscious patient. An injury of the right motor area by contracoup was at first suspected, on account of the disability of the left arm, but further careful examination showed that this was due to an injury of the acromial process.

In an unconscious patient and where the details of the accident are unknown, disturbance in the functions of limbs are very important aids in localizing the point of maximal cranial and cerebral injury, but it must be definitely decided by very careful examination that such a motor disturbance is not due to local rather than central injury. Sometimes, when there is no abrasion or discoloration of the skin, fractures about the hips, shoulder or other parts can be readily overlooked.

Case VI. Mrs. B., American, aged 40 years, housewife. Found unconscious on the street, October 4, 1906. Had been riding in buggy. Severe contusion of the right side of the back of head at base of skull. Patient unconscious. Pupils unequal, right pupil dilated, left pupil not so much so. Both pupils react to light. Temperature 98; pulse 60. Cheyne stokes respiration. Hemorrhage from right ear. Examination revealed no motor disturbance. Patient prepared for exploratory incision. Cavities of nose and ears thoroughly cleansed, right ear irrigated with very hot boracic acid solution and packed with iodoform gauze. Incision made over point of injury and compound comminuted fracture of base below lateral sinus on right side about one and a half inches in diameter exposed. Fragments of bone removed and laceration of dura and subdural hemorrhage found. Sinus apparently not injured. Bony fragments and blood clot removed. Patient put to bed, given 1/50 gr. of strychnin every four hours, 10 min. adrenalin and 1/150 gr. atropin, hypodermically, and observed for further symptoms. October 5th, temperature 97, pulse 100, respiration 32. Enema given of coffee, brandy and saline every four hours. Patient still unconscious. Dressings of head showed evidence of moisture. Head redressed; large quantity of blood of watery character. October 6th, patient's temperature 100 3/5, pulse 102, respiration 30. Patient still unconscious. Passed urine and feces in bed, notwithstanding bladder being emptied by catheter every six to eight hours. No longer retained rectal nourishment. Patient had three convulsions lasting from five to ten seconds. Head redressed and a large quantity of blood again removed. October 7th, temperature 100 2/5, pulse 100, respiration 34. Six convulsions during night, lasting from one to two minutes. Head redressed; less blood. Patient partly conscious. Patient makes effort to talk, and did answer "Yes" and "No" in a whisper. October 8th, temperature 102, pulse 120, respiration 40. Patient not so conscious as the day before. Holds nutritive enema at times. Up to this time, patient was given nothing by mouth, as it was impossible to get her to swallow. Head redressed; very much less seepage. Patient's face more flushed and showing more evidence of cerebral congestion. Patient raised in bed to an angle of forty-five degrees to lower blood pressure and ice cap applied. From October 8th to October 12th condition remained about the same. Still unable to take nourishment by mouth. Eight to ten convulsions in twenty-four hours, but occurring further apart and of less severity. October 13th, patient begins slowly to take small quantities of liquid food by mouth. No convulsions. Answers questions in a very low whisper. From October 13th to 20th temperature ranges from 98 to 100. Still troubled with involuntary evacuations at times, probably once or twice in twenty-four hours. Patient's general condition improved and was discharged from hospital November 9, 1906. Last seen February 1st; apparently well.

Case VII. J. M., American, aged 27 years, clerk. Seen at hospital January 21, 1907. Injured January 20th, about 11 p. m., being hit on the head by the controller of electric car. Patient up and about all day of 21st, suddenly became unconscious at his home about 7 p. m. Removed to hospital. On examination patient showed no disturbance of motor areas. Pupils equal, respiration regular, temperature 98, pulse 100. An exploratory incision made over injury on right side of frontal region. Found depressed fracture. Removed fragments of bone and extradural clot. On opening dura considerable serus exudate. Head dressed, patient put to bed, but elevated to an angle of forty-five degrees, applied ice cap. Head dressed every day. Patient given liquid diet. Left hospital two weeks later.

Case VIII. B. L., Italian laborer, aged 42 years. Struck by runaway team, December 22, 1906, at 7:30 p. m. Examination showed fracture of occipital bone and several extensive lacerated scalp wounds in occipital region. Patient unconscious. Hemorrhage from both ears. Pupils dilated; did not react to light. Pulse 60, temperature 97. Scalp wounds were enlarged and injury to bone examined. Extensive hemorrhage about cerebellum. Loose pieces of bone, which were about two inches in diameter, removed and clot cleared away and hemorrhage apparently stopped. December 23rd, patient in a comatose condition. Pulse 126. Temperature 100. Pupils still dilated; no reaction to light. Patient delirious.

General condition much worse. Patient died at 11:30 a. m.

Autopsy showed laceration of cerebellum and extensive hemorrhage about the base of brain and in the fourth ventricle.

Case IX. K. C., aged 12 years. October 10, 1906. Injured by being struck by automobile. Temperature 98 1/5, pulse 75. Pupils equal; react to light. Extensive laceration of right cheek. Scalp wound over right parietal region three inches in length and large hematoma over median line of scalp. Child partly unconscious. Examination showed no motor disturbance. Exploratory incision made; large hematoma found under scalp in median line. Having no reason for further interference, scalp was sewed up and patient put to bed. Next day, temperature 98 2/5. Patient continued to improve and was discharged from hospital in ten days. No need for operation in such case other than exploratory incision to determine what was under hematoma.

Case X. M. L., aged 14 years. Struck by a runaway team. Extensive laceration of scalp over right parietal region. Temperature 97, pulse 128. Pupils equal. No motor disturbance. Incision revealed depressed bone 1¼ inch in diameter in right parietal region about over fissure of Rolando and extradural clot. Loose fragments of bone and clot removed. Brain pulsating. No further symptoms developed.

Case XI. F. S., aged 41 years. November 28, 1906. Injured by falling from an automobile. Examination showed pupils equal; reacted to light. Hemorrhage from right ear. Temperature 97, pulse 54, respiration 22. Patient unconscious. No laceration of scalp, but slight contusion over median line on top of head about two inches in diameter. Accident happened about two hours before. Examination showed no evidence of motor disturbance. Exploratory incision over parietal region revealed no fracture of the skull. History showed patient to be very much intoxicated at time of injury and had been so for several days. Patient put to bed to await further developments. Following day, November 29th, pupils equal; react to light. Temperature 99 3/5, pulse 125, respiration 30. Patient very restless; attempts to talk. Still can not recognize any one. General relaxation of limbs. Reflexes all diminished. November 30th, patient comatose. Pulse 130. Temperature 100 2/5. Patient generally in a dying condition. Patient died at 12:30 p. m.

Autopsy showed fracture of the right outer border of the forearm magnum at the condylar portion where it articulates with the articular process of the atlas and fracture into the anterior condylar forearm which transmits the hypoglossal nerve and a branch of the ascending pharingeal artery, the posterior condylar forearm which transmits a branch from the lateral sinus being uninjured, and very extensive hemorrhage in the cord about the medulla. This hemorrhage extended down into the spinal cord subdurally. Dr. Harvey Cushing and Dr. M. Allen Starr of New York, in the A. M. A. Journal of September 22, 1906, have suggested lumbar puncture in the diagnosis of cerebral hemorrhage of asphyxiation, of new-born infants from delayed labor. The lumbar puncture shows a bloody cerebral spinal fluid in such cases, and I think the lumbar puncture may be of equally great importance in diagnosing fractures of the base. I have used lumbar puncture and find it a good means of diagnosis of hemorrhage of base, as spinal fluid shows pressure of blood.

Case XII. J. R., aged 30 years. Injured September 26, 1906, by falling from a horse. Seen five days later, October 2nd, at hospital. Patient had been up and around until day before, October 1st. Complained of headache. Scalp wound had been dressed and sewed up by a physician who had seen him at time of injury. Had not had any treatment since. Patient showed no signs of motor disturbance, but complained of headache. Patient remained in bed on day of October 2nd, and about 8 a. m. had a convulsion. One-half hour later had another convulsion. Was called to see patient, and during examination of wound, which was opened and stitches removed, patient had convulsion, which appeared to be Jacksonian epilepsy, wound being in left frontal region. Patient was prepared for exploratory incision. The incision was made over frontal region, which revealed a depressed bone about 1¼ inch in diameter over left frontal region and extradural clot. After removal of fragments of bone and extradural clot, brain showed no evidence of pulsating. Small incision was made into dura and considerable exudate, which seemed to be walled off about injury, removed. On removal of fluid brain showed normal pulsation. Patient showed no further trouble. Wound dressed every day. Temperature never rose above 100 and pulse rated from 90 to 110. In two weeks was discharged from hospital, convalescent.

Case XIII. Jas. H., aged 19 years, carpenter. Injured March 2, 1907. While running upstairs, hit head against joist, fell over side of stairs about ten feet and remained unconscious for a short time. Was taken home in about one hour and Dr. Koford called. Later I was called in consultation with Dr. Koford, and after head being shaved a small laceration one-quarter inch in length was found on right parietal bone about right parietal eminence. Careful examination of wound and probing showed no evidence of fracture about point of laceration, but two inches to the left of small laceration and distinct crepitus for about two inches. Case was diagnosed as a fractured skull and prepared for an exploratory incision. Exploratory incision revealed a crushed leadpencil under the scalp and no fracture of the skull.

Case XIV. N. T., aged 75 years; news agent; birthplace unknown; resident of California for forty years. Injured on March 31, 1907, at 10 a. m.

Injured by electric car; was knocked down and struck head on ground. Examination showed only slight contusion over left cheekbone. Patient unconscious; remained in deep coma until death; Pupils did not react to light; pulse about normal; labored breathing; complete relaxation, with no reaction to stimulants. Patient lived about five hours.

Autopsy showed anemia of the brain, due to concussion; also a slight hemorrhage into right cerebral fossa over temporal lobe, but did not enter into the cause of death. Death due to concussion and shock.

Discussion.

Dr. J. H. Barbat, San Francisco: The localization of brain injuries is comparatively easy when they are located in the motor area, but it is quite different when the anterior portion of the frontal lobes is affected. We may have extensive laceration of the brain tissue in this region without the slightest positive symptoms. I saw a young man who fell 20 feet and landed on his hands, breaking both wrists, recover from the fractures and go home four weeks from the date of injury. Three days later, the head symptoms developed and he died inside of five weeks from the fall, with symptoms of meningitis. The autopsy showed a fracture of the base of the skull from the horizontal plate of the frontal bone to the foramen magnum. The chibriform plate of the ethmoid was crushed in and the ethmoid cells opened through the frontal bone. The ethmoid cells contained a piece of brain tissue as large as the end of the thumb; no hemorrhage or symptoms of meningities. In this case more than four weeks elapsed without the slightest symptoms pointing to the injury of the brain.

THE MEDICINAL TREATMENT OF MYOCARDITIS.*

By WM. WATT KERR, M. D., San Francisco.

It is difficult to write a satisfactory article upon the treatment of any disease because so much depends upon the individuality of the patient, the extent of the tissue changes, the co-existence of complications or distinct morbid conditions, all of which tend to diminish the possibility of describing a course of treatment equally applicable to any two consecutive cases.

The treatment of myocardial lesions should not be a matter of routine practice; in each case an attempt should be made to depict the condition of that particular heart, not always to regard it as a completed process in which there are localized fibrous patches, or in which the interstitial growth of connective tissue has gradually obliterated and replaced muscle fibres, but to remember that the inflammatory process in the cardiac muscles is molecular at its inception as in all other tissues and quite as amenable to treatment, and that the fibrosis denotes the completion of the process. It would indeed be a hopeless task to treat a heart in a condition of extensive fibrosis. Nor should we forget such elementary physiological facts as that the cardiac contractions can only take place as the result of chemical changes in the muscle cell; yet, practically this often takes place, and we find a course of treatment suggested that is entirely directed to influencing the heart muscle through the vagus or sympathetic nerves, without taking any precautions towards the reconstruction or preservation of muscle fibres, regardless of the fact that nerve stimulation without muscle cells is as impotent to produce a cardiac systole as is a lanyard to fire a cannon without a charge of gunpowder.

The ideas of heart disease and drugs of the digitalis group are altogether too closely associated in the medical brain, so that these medicines, although invaluable in some cases of myocardial disturbance, are only too frequently prescribed with disastrous results to the patients. Their great danger lies in the rapidity with which the patient apparently is benefited by their adminisration. I say "apparently" because the unquestionable amelioration of symptoms is obtained by stimulating the remaining healthy and partially changed fibres without improving the fibres themselves so that the actual condition of the heart is masked just as the progress of other diseases is often concealed by opium. Before proceeding further let us make our position on this topic clear:

The use of digitalis and its allies in the treatment of myocardial disorders is not condemned, it is the indiscriminate use that we deprecate; within the next few minutes it will be stated that in some cases digitalis is the only remedy, in others it occupies a secondary position, while in a third class it is absolutely useless. The pre-eminent question in the treatment of this disease must always be what can we do to improve the muscle fibre? In addition to this it may be necessary to call into play agents, medicinal and otherwise, to relieve immediate sufferings, but these latter should always aim at bringing the patient within the possibilities of his heart, not at driving the heart to meet the demands of the patient.

The subject of baths, rest and regulated exercise in the treatment of myocarditis will be presented to you by other gentlemen who participate in catering for this symposium. I would only encroach upon their domain so far as to emphasize my belief that the last is necessary in all cases, and my instructions to all patients are that they must draw a sharp line between exercise and exertion; that exercise, whether active or passive, ceases to be exercise when it produces or aggravates dyspnœa and must be discontinued until the difficulty in breathing has passed away.

Personal experience has been that the medicinal and dietetic treatment of myocardial disturbance is most satisfactorily conducted when selected according to the most prominent factor in the etiology of each case and therefore they are generally grouped somewhat in the following way:

1. Myocardial changes that are secondary to valvular lesions.
2. Myocardial changes due to infections.
3. Myocardial disturbance depending upon errors in diet and food metabolism.
4. Myocardial disorder consequent upon disordered excretions or internal secretions.
5. Myocardial asthenia secondary to the existence of neoplasms.
6. Myocarditis as a part of senile decay.

It must be understood that this is not intended to be a classification according to which the various cases can be grouped absolutely in one or other category; such a proceeding is impossible as different causes nearly always co-exist in the same patient, but generally one is pre-eminent over the others and consequently figures most prominently in directing the treatment.

1. The myocardial changes that are secondary to valvular lesions are probably the most easily treated and are best adapted to remedies of the dignitalis group. Failure of compensation in vavular lesions is not simply a matter of strain, it is really a nutritive change in the myocardium as a result of deficient or embarassed coronary circulation and must be treated as such. In lesions of the aortic valve the trouble begins as soon as the increase in muscular fibres due to hypertrophy of the left ventricle gets beyond the nutritive power of the normal coronary circulation, while in all mitral lesions the tendency from the first is to cause an increased internal pressure in the right side of the heart so that escape of blood from the coronary veins is obstructed, the cardiac muscle passes into a state of passive congestion, its nutrition is impaired and after a time degeneration of the fibres takes place. The same thing occurs in patients who suffer from emphy-

*Read before San Francisco County Medical Society at the Symposium on Treatment of Myocarditis.

sema or asthma and explains why in such diseases both sides of the heart suffer although mechanical obstruction is only exercised against the right side.

It is very evident that under such conditions the primary object must be to relieve the ambarrassed coronary circulation, an object for which digitalis and kindred drugs are peculiarly fitted because not only do they influence the general circulation, but they are directly beneficial to the cardiac muscle in various ways: by slowing the heart they rest the muscle, by increasing the aortic pressure the blood enters the coronary arteries with greater force, and lastly the more powerful contraction of each fibre empties the muscular tissue of its passive congestion, aids in the removal of accumulated waste matter and facilitates a fresh supply of pabulum to the muscle cell. In cases where the myocardial changes are incipient this is all that is required, but in many instances the failure of compensation may have resulted in impaired function of other organs, so that substances which never should have been formed in the body, or under normal conditions would have been excreted, enter the general circulation and act as toxins on the cardiac muscle. In this state of affairs there will require to be a combination of the above treatment with that soon to be discussed under the section on changes due to faulty metabolism, or it may be that the failure has persisted so long or recurred so frequently that the changes in the myocardium are extensive and permanent and are better adapted to such a course of treatment as is recommended for the senile heart.

2. Myocardial changes due to infections. These can be divided into at least two classes, (1) those in which the changes are the result of the influence of the toxin directly upon the cardiac muscle; (2) those in which the infection affects the coronary arteries and induces secondary changes in the muscle fibres. In the first we have diphtheria, rheumatism, smallpox, typhoid fever, erysipelas, pneumonia. My own experience is that in the acute stage of such cases no remedy is so efficacious as the tincture of the chloride of iron in doses of about twenty minims every three hours. Why this particular preparation of iron should be so beneficial I cannot say, but it is the experience of many other clinicians. After the acute stage is passed, arsenic gives better results than iron. So marked is the difference that we might almost venture the suggestion that the chloride of iron influences the toxin, while arsenic exerts itself upon tissue nutrition. The latter part of the hypothesis is certainly in accord with pharmacologists, who have found that in small doses arsenic checks change and decreases nitrogenous elimination. To attain these results the drug is best given as Fowler's solution, three or four drops three times daily and continued for a considerable length of time without increasing the dose. Typhoid fever and syphilis are probably the two infections which most frequently produce changes in the coronary vessels that terminate in myocarditis. The treatment in such cases is the prolonged use of moderate doses of iodide of potash, in the hope that it will by its alterative influence produce a healthier condition of the vessel walls, or at least delay the process of obliteration.

In the treatment of cases belonging to this group such remedies as digitalis take a second place. Since they cannot possibly have any influence upon the toxic process, they are only permissible where, notwithstanding the fact that the work of the heart has been reduced to a minimum, it becomes evident that the circulation is not adequate to the immediate demands of the body. We have then to choose the lesser of two evils, because the failure of circulation through the viscera, including the heart muscle itself, with all the consequent mal-nutrition and mechanical embarrassments, is productive of greater danger to recovery than is the careful and judicious stimulation of an inflamed myocardium. It is almost needless to say that under such conditions the dosage must be carefully watched and the influence on the heart noted from day to day.

3. It has been long recognized that myocardial disturbance is frequently the result of disorders of the alimentary system or defective metabolism, but the interpretation of the relation between the two is of more recent date. Formerly the palpitation, cardiac pain or weakness of which such patients complained was regarded as nervous in character due to some reflex disturbance of the branches of the vagus, but there is little doubt that many of them are the result of toxins upon the cardiac muscle. The physiological experiment that put this matter beyond doubt was the establishment of Eck's fistula, so that substances which should undergo further change in the liver could at once enter the general circulation; when proteids were fed to dogs thus prepared, death rapidly ensued. A recognition of the fact that imperfectly transformed nitrogenous food will result in the formation of muscle poisons that may escape through the liver and have a deleterious influence upon the heart is of the greatest importance, not only because it will explain the existence of many cases of myocarditis, but also for the reason that it indicates the dietetic rules in all cases of the disease. The first effort in the treatment of cases of myocarditis due to alimentary disturbance should be to ascertain where the dietetic error has crept in, for although the muscle poisons are mainly the result of proteid metabolism, it does not necessarily follow that the patient receives too much proteid material; more frequently the trouble is due to interference with digestion or assimilation, and consequently it behooves us to find out where the flaw is, whether it lies in an excess of nitrogenous food, or the form in which it is taken; or the nitrogenous food may be all right both in quantity and quality, but the hydrocarbons or carbohydrates be in excess or of such a nature that they disturb digestion and thus prevent the digestion of an amount of proteid material that is absolutely necessary to the best welfare of the patient; or there may be absence of some of the gastric or intestinal ferments, so that the food does not go through the preliminary chemical processes essen-

tial to its future metabolism; or there may be changes in some of the other viscera, such as hepatic cirrhosis, which diminishes the activity of the organ, and imperfect metabolism results. It is only after such an inquiry as the foregoing that it is possible to say what constituents of the dietary or what organs are responsible for the symptoms and physical signs presented by the patient.

While it is therefore necessary to arrange the diet according to each individual case, there are certain general instructions which may be given to all regarding articles of food to be avoided, intervals between meals, and other matters that are of great importance to secure perfect digestion and metabolism: (1) The daily amount of food should be divided into three meals, all nearly equal in quantity; but the articles that are most difficult of digestion should be taken at the midday meal, and the lightest in the evening. The custom of taking one very hearty meal in the day is to be condemned, especially if that be taken in the evening, while breakfast consists of a little fruit and lunch of a cup of soup and a biscuit. The objections to this common dietetic habit are that it overcharges the blood with a large amount of nitrogenous waste at one time, and furthermore that the stomach will not have time to complete digestion; if, on the other hand, the amount of food be divided up more equally throughout the day, then the waste matter in the circulation is less liable to be in excess of the capabilities of excretion. (2) The meals never should be less than four hours apart, so that the stomach can empty itself and rest before it is called upon to dispose of more ingesta. (3) No food should be taken between meals. (4) A glass of hot water should be taken every night upon retiring, as this is the best way of flushing not only the stomach but also the liver. (5) Alcoholic stimulants should be avoided if possible, but if they must be given, then whisky and water, or a light Moselle wine are to be preferred. Champagnes, sweet and heavy wines should be forbidden.

The medicinal treatment must depend upon the particular flaw in the alimentary system; it may be necessary to give some aids to digestion, such as nux vomica and one or more of the digestive ferments, but personal experience is more in favor of a line of treatment by means of alteratives, especially some form of mercury. The effect of mercury in myocardial troubles is not sufficiently appreciated; the benefit is not simply a result of purgation that could be accomplished equally well by a saline or any other cathartic; not merely the removal of dropsy and œdema, so that respiration is less embarrassed, but clinical experience from before the days of our grandfathers to the present time testifies to the value of mercurials where none of these conditions exist, and records cases of angina pain and precordial distress relieved by their administration. No doubt the improvement is due not simply to the action of these remedies upon the liver, but to an increased activity of the lymphatics and glandular system generally, so that exudates and toxins are rapidly absorbed and excreted, the blood is purified and the quality of all glandular secretions thus improved. When simply the alterative effects are desired, it is my custom to use the protoiodide of mercury in doses of one-quarter of a grain three times daily for ten days or a month, and in addition to this a saline aperient every other morning; when there is œdema or dropsy then the squill, digitalis and blue mass pill three times daily, or a grain of calomel, or five grains of gray powder given with the same frequency for several days, are better adapted to the case. When the patient is distinctly gouty, good results are obtained from colchicum.

So soon as there is reason to believe that the alimentary disturbance has been corrected then an attempt should be made to rehabilitate the muscle fibres, and this is best done by means of arsenic. This remedy should be given for a length of time in small doses, and irritability of the stomach may be overcome by putting four or five drops in a tumblerful of water and instructing the patient to sip this amount in the course of two or three hours. It may be necessary in some cases to use digitalis in addition to the above named remedies, with the object of relieving coronary stasis, but this drug will not have any effect on the myocarditic process and will utterly fail in furnishing relief unless given simply as an adjunct to the alternative and dietetic treatment.

The amount of time at my disposal prevents anything but the most brief summary of the treatment of myocardial changes consequent upon disordered excretion or internal secretions. While medicinal measures may palliate the suffering of the patient, they rarely accomplish anything of a curative or even retarding influence on the case itself.

Bright's disease is probably the most prominent example of disturbed excretion exercising a deleterious influence on the cardiac muscle, and many theories, such as mechanical obstruction in the kidney, loss of internal renal secretion, have been promulgated to account for the cardio-vascular changes, but as none of them have stood the tests of clinical observation or laboratory investigation, we are forced to ask ourselves whether the myocardial changes are secondary to those in the kidney, may they not with equal justice be regarded as part of the same process. The progressive character of nephritis simultaneous with the cardio-vascular changes, the fact that high blood pressure has been demonstrated in the retina coincident with or it has been claimed antecedent to the first evidence of renal disturbance, the multiplicity of exciting causes such as scarlet fever, alcoholism, gout, etc., all of which frequently produce changes in other tissues without any evidence of the kidneys being affected, suggest that the relationship between Bright's disease and myocarditis is one of common cause not of sequence. Croftan's experiments upon rabbits give color to this hypothesis, because he found that frequent injections both of xanthin and hypo-xanthin produced nephritis, cardiac hypertrophy and thickening of the blood vessels due to small

cell infiltration of the intima and adventitia. As both of these substances are derivative of proteid metabolism, they would indicate that the curative treatment of the disease, under this theory, must lie in the regulation of nitrogenous food, that this form of myocarditis must be treated in a way analogous to that due to disorders of the alimentary system and defective metabolism, and this is just where the clinician has placed it for many years; for further progress we must wait until the labors of the chemical pathologist have furnished us with the knowledge necessary to the selection of an appropriate armamentarium.

Diseases of the thyroid gland furnish us with the best example of myocardial disturbance due to disorders of internal secretions. When the cardiac disease is the result of diminished thyroid secretion, as in myxœdema, it is easily remedied by the continual administration of thyroid extract in amounts varying with the exigencies of each case. Prior to the discovery of this method digitalis, strychnine, arsenic and many other remedies were tried ineffectively and the patient drifted slowly to death or insanity.

When the secretion is in excess our hope for relief lies in one of two things, either the spontaneous arrest of the disease or destruction of the gland. Personal experience has been that far more cases were arrested spontaneously without any medical treatment than were improved by ointments, galvanism or any internal medication. Serum and X-ray have yet to establish themselves. In the earlier stages the distressing symptoms are frequently mitigated or relieved by the use of cardiac tonics because the muscle cells are still responsive to their influence, but notwithstanding their use the muscular changes go on unretarded, unless the thyroidism itself is arrested by one of the methods above mentioned, until a stage is reached when the myocardium is absolutely irresponsive to digitalis, strophanthus or any other cardiac tonic. The only hope for the medical cure of this form of myocarditis lies in the discovery of some agent that will control or counteract excessive thyroid secretion.

Cardiac asthenia associated with disease of the suprarenal glands is likewise intractable to treatment. The fact that epinephrin has failed to produce any benefit has made the outlook even more hopeless and has given rise to the idea that epinephrin is neither an antitoxin nor a ferment concerned in metabolism; but that toxins exist in the blood which are normally attached to the suprarenal glands and there destroyed, and that epinephrin is a secretion whose purpose is to modify the blood pressure in the gland according to the demands made upon its activity.

Myocardial changes are frequently due to the existence of neoplasms, but time permits me only to remind you of the role played by uterine myomata in this respect. In the Toland Memorial Lectures for 1904 the subject was discussed at greater length than can be done at the present time. In some instances the change may be secondary to anæmia, but in many others there has not been any hemorrhage, nor does anæemia exist. Thus one patient gave the following blood count: Red cells, 4,700,000; leucocytes, 8,000; numerous blood platelets; hemoglobin, 66 per cent; color index, 0.70. Appearance of blood cells normal. No parasites found. Differential count: Neutro-philes 81 per cent; small lymphocytes, 17.5 per cent; large mononuclears, 1.5 per cent; eosinophiles, 0.0. Kessler believes that the dense tumor so increases the resistence to the blood stream that myocardial changes are a consequence; in one of the cases observed by me the cardiac symptoms began when the tumor was no larger than a walnut, so that there could not be any great increase in resistance, and only ceased with removal of the tumor. Fleck suggests that the myocardial changes and the tumor are due to an abnormal secretion from a diseased ovary; to establish this theory we must have statistics showing what particular ovarian disease yields this abnormal secretion, and in operations, where the heart improved after removal of the fibroid, it should be stated whether the ovary was taken away at the same time. In some cases temporary improvement follows the use of iron and arsenic in combination, but where the malady is associated with progressive cardiac weakness surgical measures should not be delayed until it becomes a question whether the heart is able to endure the strain of the operation. Senile myocardial changes are most frequently the result of an endarteritis gradually obliterating the small coronary arteries and producing degenerative changes in the muscle fibres from defective nutrition; but this is not entirely true, for many cases of senile myocarditis improve upon a restricted diet, which would indicate that the cardiac weakness was not so much due to degeneration of the fibres from diminished blood supply as to their intoxication from excessive or improper pabulum, and hence the rapid improvement when this is withdrawn. Everyone must have noticed that the majority of old men who enjoy good health are frugal in their habits. Eating has become such a social custom instead of a means to maintain life that most people fail to recognize that with increasing years the demand for food for purposes of growth and repair gradually diminishes, but go on eating the same quantity as they did at the age of twenty-five or thirty, unless personal discomfort on account of obesity or indigestion compels them to reluctantly deny the gratification of a palate which it has cost them much to educate. The dietetic suggestions made on the section on disturbance due to faulty metabolism applies with greater force to the patients in the present group. Indeed the closer the diet of the man of 60 resembles that of the boy of 6 the better it will be for his heart.

If the tissue changes are extensive it may be necessary to use cardiac tonics such as arsenic, strychnine or even digitalis to maintain the circulation and prevent coronary stasis. In the use of numbers of the latter group the greatest care must be exercised, the drug given in small doses, and the effect upon the periphereal vessels closely watched. The necessity for this lies in the fact that the blood vessels generally may respond to digitalis very quickly and by

their contraction increase the resistance to the cardiac systole so much as to cause the greatest distress to the patient and place him in actual danger. Under such conditions my custom is to give digitalis and nitroglycerin at the same time, keeping the two drugs separate and varying the dose until the necessary driving power of the digitalis is obtained while the arterial contraction is sufficiently antagonized by the nitroglycerin.

TREATMENT OF HIP-JOINT DISEASE.

By W. LE MOYNE WILLS, M. D., Los Angeles.

The part in this discussion, which has been assigned to me is the operative treatment, after that by fixation and traction splints and the acute process has passed—and the complications and results of coxitis remain.

Abscess—Is a very frequent complication of hip disease occurring in about fifty per cent of all cases. In those cases in which appropriate treatment is instituted early, not more than twenty per cent suffer from abscess, according to Gibney. Abscess usually results in sinuses which may discharge for a time and eventually heal. A common seat of abscess in hip disease is on the upper and anterior part of the thigh, external to the femoral vessels, but they may occur elsewhere, on inner aspect of the thigh, in gluteal region, or if acetabulum is perforated, above Poupart's ligament in perineum, or open into the bladder or bowel.

In cases of hip disease of long-standing suppuration, the patient may develop progressive emaciation and amyloid changes in liver and kidneys, attended with albuminuria, and anasarca, usually soon followed by death. Abscess may form slowly or rapidly and attain such size as to interfere with wearing apparatus. When pus is diagnosed, it should be aspirated or evacuated by incision. Gibney holds that the most satisfactory results follow repeated aspiration or small incisions, followed by injection of iodoform emulsion, and closure of wound by compresses of gauze, to be repeated as often as cavity refills. The cavity and sinus, in spite of any method, will remain open and discharge until all debris is thrown off from diseased bone and cartilages. Old sinuses should be opened up and curetted, after which they will often rapidly close.

In tuberculous ostitis of the hip, when the process is limited to well defined foci surrounded by firm bone, the condition resembles that of an abscess, and drainage of such focus is desirable, when part is easily accessible, as the knee or os-calcis; but when the epiphysis of femoral head or the acetabulum are attacked, it is difficult to satisfactorily drain or remove diseased tissue: it is not easy to determine by skiagram the existence of a sharply defined focus.

It has been shown by Feiss that tubercular changes may exist in bone in an early stage of development and on the borders of apparent tubercular cavities, and yet not be demonstrable in X-Ray pictures taken of living subjects, especially when taken in the deeper structures. This procedure is most satisfactory when process is near the trochanter, which may be trephined or tunneled for removal of detritus or sequestra.

The operation is performed by exposing the part of bone in which the focus has been located and removing it by thorough curettage. (If in the neck or head of femur, trochanter is exposed with least amount of damage to soft parts and trochanter and neck drilled until head has been reached, or focus or pus found sooner.) The cavity, if there has been one found, after having been scraped, should be dried and wiped out with pure carbolic acid and alcohol, or two and one-half per cent solution of formalin (and wound closed all but temporary gauze wick).

Osteotomy-Gant—Where the joint is partially or completely anchylosed and the leg fixed at a bad angle to the trunk, correction by osteotomy of femur, will diminish deformity when walking, and give greater length to leg. Gant devised this operation in 1872, dividing the femur below trochanter minor. His method has been modified, some using the chisel, others the saw. The only instruments needed are a chisel properly tempered and wooden mallet.

(The patient aseptically prepared, on back or side, sand pillow under leg, chisel is driven into leg, cutting edge being entered in long axis of limb and turned when it pierces periosteum, and then enters the bone, at a right angle.) The chisel should be driven into bone by sharp blows with mallet. The bone should not be entirely divided and when evident that only a shell remains, very little force will make a green stick fracture, and leg be brought to a proper angle to trunk. No manipulation of bone should be made after the partial fracture. It may be necessary to divide bands of contracted fascia in upper thigh to completely extend limb. A properly protected and applied plaster spica is put on to hold the leg in corrected position. All bony prominences must be carefully padded to prevent sloughs. If plaster cast is undesirable, a bed frame with traction or a double Thomas' splint may be used. Confinement to bed for five or six weeks.

If it is desired to compensate for bone shortening, it can be done by putting the leg in an abducted position. Risks attending operation are slight. Hemorrhage is very rare, though accidents have been reported from pressure on femoral vessels by sharp edges of bone. Marked improvement in general condition often follows operation after patient leaves bed. Fixation in plaster splint should be continued six weeks longer. Fixation must not be abandoned too soon as relapse occurs.

The ultimate functional results are excellent and though there may be no motion at hip joint, the lumbar vertebræ are more movable and patient walks with less lurch and deformity. The operation is indicated in all cases of severe deformity in which the distortion seriously interferes with locomotion.

Mr. Robert Jones of Liverpool does a modification of Gant's osteotomy; instead of a chisel and mallet, he uses a pistol shaped saw whose narrow blade ends in a probe point with which he saws

through shaft of femur just below junction with neck, outside intertrochanteric line. He makes a small incision with a slender knife to the bone, passes saw through this channel and very quickly cuts through bone, breaks lower shell of femur, puts leg in best possible position to correct faulty angle, slightly abducts leg and puts patient up in a double Thomas' hip splint. Mr. Jones claims he gets better results than with chisel; that bone dust is taken care of and that end results are excellent.

Excision of Hip Joint—This method of treatment is based on the opinion that in a tuberculous joint lesion, repair is hastened by removal of diseased portion. Excision is less to be advocated on the hip than at the knee or ankle, because it leaves a poor joint for weight bearing purposes, and because it is difficult to remove acetabulum, frequently primarily diseased. Excision in early cases is not justified if conservative treatment can be continued for a sufficient time, and with thoroughness. The hip is more mutilated than by cure by natural process of gradual absorption and repair, which leaves a more or less anchylosed hip, consequently excision is reserved for the severer cases.

The value and efficiency of excision of the hip has been much disputed. Two of the most noted authorities on hip disease in England, Mr. Howard Marsh of the Great Ormond Street and Alexandra Hospital for hip disease in childhood, and Mr. G. A. Wright of Manchester and the Pendlebury Hospital for Sick Children take diametrically opposite views.

Mr. Marsh is strongly opposed to excision for the following reasons: He considers the results obtained by continued rest to be such as to render excision totally uncalled for. Thus continued rest gives a mortality of only five per cent. Seventy per cent of cases thus treated recovering with only slight lameness, and loss of movement. Even when suppuration has occurred, the mortality is only six to eight per cent.

On the other hand, Mr. G. A. Wright, speaking from a larger experience of over one hundred cases of excision, of which *only three* at most, died of direct result of operation, strongly urges that the hip should be excised as soon as there is evidence of external abscess, and still better results would, I believe, be obtained by operating before the pus has escaped from the articulation. The operation is discredited because it is put off until disease is so far advanced that no treatment can have more than a fraction of good results; while timely excision cuts short the disease, saves pain, lessens the time of treatment, and gives a better limb.

Again Mr. Wright says, "While fully aware that abscesses disappear, and tuberculous lesions cicatrize under favorable circumstances, I think that in case of the hip, delay is unwise amongst the hospital class, with whom it is impossible to deal on the same terms as with the well-to-do. In almost every instance, I have found much more extensive disease than might have been expected from the external evidence unless the pathology of affection is born in mind; and I believe that once this chronic osteomyelitis is established, nothing short of excision can *in hospital cases* prevent the ultimate progress of the disease to abscess, and too often to gradual exhaustion of patient by pain and discharge. Nature, of course, in many cases will, unaided, get rid of dead bone by slow and tedious processes, but the number of children who can survive the process of elimination is very small, while the mortality after early excision is not great, and the failures are mainly in those instances where the operation has been put off too long, where actual necrosis or caries of head of the femur with destruction of bone and cartilage and sequestra of varying size in the acetabulum, or at least caries of it is known to exist. I think few advocates of non-operative treatment will be found."

With reference to such a divergence of opinion between two authorities on the subject, it should be known that Mr. Marsh worked under more favorable conditions than most hospital surgeons. At the Alexandra Hospital cases were kept under treatment as long as rest and extension were required; if an operation was required, the case was transferred elsewhere. Mr. Wright on the other hand had the usual hospital conditions, and could not prolong treatment indefinitely, and hence arrived at a different conclusion. It is largely a "class" question.

If the patient can have all the care and attention for a sufficiently long time—the conservative plan will no doubt be the better one for that case. But if, as in most hospitals, where patients are from the tenement districts, and are victims of their surroundings, the question changes into, what will prevent the greatest loss to individual in suffering, time, and afford the greatest chance for a good result with least amount of deformity and danger as to life, and such considerations make Mr. G. A. Wright, and others who agree with him and who operate on the sick and poor in large numbers, adopt the more radical method, as best for hospital cases.

The slums of London, Manchester, Boston, New York, and all other large cities furnish the great mass of cases for Children's Hospitals, and upon such cases and their treatment statistics are based. Hence one hospital's experience and statistics will differ greatly with another's, depending on the class of cases, the endowment of hospital and whether the surgeon can keep his cases as long as he wishes to secure results by the more conservative methods, before proceeding to the more radical. Men's opinions are formed by habit and by their experiences, and should be contrasted accordingly.

Operation—Posterior Incision—Formerly the great advantage claimed for this method was better drainage, but the choice of method should largely depend on the location of the disease in and about hip joint, whether more anterior or posterior. The posterior operation consists in making incision over middle of great trochanter, freely exposing capsule and upper end of femur. The exact position of head and neck is made out by finger while an assistant rotates the limb.

Second incision opens capsule freely; parts being properly exposed and protected, the bone is sawed through just below top of trochanter with an osteotomy, metacarpal or keyhole saw. There must be clean sawing, and no splintering of bone. The head and neck are levered out of the acetabulum. The round ligament is probably destroyed, if not it must be divided. The acetabulum is examined and if merely roughened, is left alone; if pitting or erosion present, curetting and gouging must be resorted to. Sequestra must be removed. If acetabulum is perforated, and pus on inner aspect of pelvis, a free opening must be made by trephine or gouge and a drainage tube passed through.

Drainage by iodoform gauze or a tube will be necessary in nearly all cases. In a few where there are no sinuses, nor pelvic abscess, and after all oozing has been stopped, sterilized iodoform can be rubbed in and wound closed with sutures, dressing must be applied and firm pressure maintained.

Mr. A. E. Barker has shown what excellent results the anterior method can give and among his later papers has published some most successful cases treated in later stages, where other means had failed, and abscesses were threatening to burst. Mr. Barker claims less interference with muscles, patient can be treated and wound dressed more conveniently, with a Thomas' splint. Primary union can be secured if all of diseased structures are removed; perfect asepsis secured; all oozing checked and wound kept dry by well applied dressings; absolute rest during healing—perfect drainage can be obtained, because discharges are serous. All diseased tissues have been removed and a clean walled cavity is left, which is capable of healing by first intention, and soon femur can be brought up and thus diminish size of cavity.

Mr. Barker, in Lancet, 1900, analyzing forty-one cases, anterior excision, as to after history speaks favorably of final result. As to functions of the limbs operated on, as seen (in all but two cases) years after they were excellent.

According to Whitman the results of excision are as follows: In the twelve years, 1888 to 1899 inclusive, 149 operations of excision were performed at the Hospital for Ruptured and Crippled. During this time 1,283 cases of hip disease were treated in the wards and 1,870 new cases were recorded in the outpatient department. Thus the operation was performed in 11.6 per cent of those in the hospital, but the relative frequency of the operation in the entire number of patients under treatment, was considerably less than this.

One hundred and twenty-one of these operations of excision, or those performed prior to 1897, have been carefully analyzed by Townsend. The 121 operations were performed on 119 patients, in two instances both hips having been operated upon. In 113, abscesses or sinuses were present, in most instances infected. In 5 cases the spine was involved as well as the hip; in two instances the knee, in 2 the tarsus, in 3 the ilium. In 24 cases the anterior incision was employed, in 97 the posterior. In 18 instances the acetabulum was seriously diseased and in 10 osteomyletis of the shaft of the femur was present. This indicates the character of the disease in the cases operated upon.

In 99 of the cases the later results of the operation were ascertained. Of these 52 were dead and 47 were living. Of the 52 deaths, 9 were due directly to the operation, shock; 28 were caused by exhaustion; 9 by tuberculous meningitis; 7 by other causes. Thirty-seven deaths occurred within six months and 10 others within one year of the operation. Of the 47 patients living at the time of the investigation 26 were cured. Of the remaining number about one-half were in poor condition so that recovery could not be expected. It is evident that in a large proportion of the cases the operation was unsuccessful as a life-saving measure since suppuration persisted.

Lovett has reported the results of 50 excisions in a similar class of cases at the Boston Children's Hospital, 1877 to 1895. The number of patients actually treated in the wards of the hospital is not stated, but 1,100 cases were recorded as having been under treatment during this time, a percentage of excisions of 4.5 of the total number. In eight of the cases osteomyletis of the femur was present and in 15 the acetabulum was perforated. The ultimate mortality was about 50 per cent.

Poor has reported the results in 65 cases operated upon at St. Mary's Hospital, New York, with a final mortality of about 43 per cent. In 21 cases osteomyletis of the shaft of the femur was present. In 11 cases there was perforation of the acetabulum and in 9 of these the opening communicated with an intra-pelvic abscess.

These statistics are quoted to illustrate the relative efficiency of late excision. The extent of the lesions in some of the cases shows that recovery would have been impossible without operation, and its failure to relieve the symptoms in so many instances is sufficient evidence that it was postponed too long. Under proper conditions for treatment excision of the hip is almost never required, but in hospital practice it would seem that it should be performed oftener and at an earlier stage of the disease.

Conditions of success in excision of hip.

(1) Age, from 6 to 14 years; after 18 should be rarely done, Furneaux Jordan's amputation taking its place.

(2) Absence of lardaceous disease.

(2) Absence of advancing trouble in other joints, or of tubercular lesions of viscera, e. g. lungs.

(4) The disease must be removed as completely as possible. The section in femur must pass below all foci of disease, all sinuses must be scraped out.

(5) Adequate drainage.

(6) Careful after treatment, the wound being kept aseptic.

(7) Patient must not be kept too long on his back in hospital air.

The consensus of opinion in regard to amputation seems to be, if done early that results are superior to excision, from standpoint of general improvement

and mortality. The chief drawback, however, is the resulting deformity, which can only be partially replaced by mechanical devices. Mortality in ordinary cases is no higher than in amputation of upper thigh. If on the other hand, there are large areas involved with tunneling sinuses, and great constitutional involvement, the operation is then one of last resort with an exceedingly high rate of mortality.

INDICATIONS OF CESARIAN SECTION.*

By A. B. SPALDING, M. D., San Francisco.

The interest of the unborn child demands attention, and its life as well as its future health should be safeguarded by the conscientious attendant. To do this one must adopt a systematic method of examination of the pregnant woman and carry it out continuously. Too often this becomes a very monotonous procedure and the practitioner falls into the convenient habit of never troubling trouble until trouble troubles him. In this paper some conditions will be mentioned which occur fortunately rather infrequently, but when they do occur or exist tax the skill and the judgment of the attendant to the utmost. Conditions which demand interference to preserve fetal life without too much risk to the mother, and which are met successfully by the operation of Ceserian Section in opposition to therapeutic abortion, craniotomy, induction of premature labor, version and forceps.

Cesarian Section may be necessary to meet a sudden or unlooked for emergency of pregnancy or labor or it may be the last heroic effort to save a patient from misplaced confidence in the powers of nature, or from ill-judged efforts of the attendant to utilize forceps. The mortality of this emergency or late operation is high, certainly 50 per cent for both mother and child. The indications can not be briefly stated, as each case is an obstetrical entity in itself. One thing is clear and that is that the general surgeon performs this operation not infrequently for certain conditions which are best met by other obstetrical operations. For instance, following Lawson Tait, some surgeons have operated for placenta previa, amassing even in the reported cases a maternal mortality of over 20 per cent. It is interesting to note the reason Dr. Tait gave for his original operation. In his previous experience he had had fourteen cases of placenta previa and had lost seven of the mothers in attempting version. It is obvious that Dr. Tait was a surgeon and not an obstetrician. He was browsing in the wrong pasture.

Occasionally in placenta previa as well as some cases of eclampsia accidental hemorrhage, or sudden death of the mother during pregnancy Cesarian section is indicated, but as a general rule these conditions are best treated by other operative procedures. A case of maternal death during the last month of pregnancy from edema of the lungs complicating myocarditis, in which I performed a post mortem Cesarian section has led me to believe that to save the child one must operate while the mother is still alive. The literature also of the few reported cases seems to demonstrate that under such circumstances more babies survive when delivered through the natural passages. Other conditions of pregnancy such as cornual pregnancy, pregnancy with ovarian cyst and threatened rupture of the uterus from hysteropexy can be successfully treated at times only by Cesarian section.

The need for the emergency operation of Cesarian section during labor is usually indicative of a failure on the part of the attendant to carry out elementary principles of the practice of obstetrics. Either the patient has failed to call on her physician during pregnancy or the physician has committed the gross error of failure to properly inform himself in advance of the condition of his patient. Ascertaining these facts during labor not infrequently leads to infection, and Cesarian section in the face of infection carries with it a very high mortality.

When the operation of Cesarian section is anticipated and is the result of deliberate decision, the patient can be placed in a suitable institution and can be operated on at a time best calculated to conserve the life of mother and child. This selected operation is the ideal procedure and gives the best results. The fetal mortality should be small, and in the hands of a competent operator the maternal mortality should be less than 5 per cent.

There is an absolute indication for operation which is present whenever the disproportion between the passages and the child is so great that it is impossible to remove the fetus even after embryotomy. This is so when the true conjugate is less than five cm. or when the pelvis is blocked to an equal degree by any form of unyielding pathological growth. All other conditions which point to a probable inability on the part of nature to expel the contents of the uterus at term are included in the class of relative indications. Considerable diversity of opinion exists as to the practical value of relative indications, and Cesarian section is opposed by the supposed simpler operations of induction of premature labor, forceps, version, pubiotomy and symphyseotomy. Nature herself not infrequently demonstrates that all these procedures are necessary if the attendant will only give her time and opportunity to exert her power. The reason for this is that it is impossible to judge in advance the strength of the labor pains, the molding of the fetal head, the behavior of fibroid tumors or of cicatricial contractures of the vagina. The size of the fetal head can be only roughly estimated and the internal diameters of the contracted pelvis itself can be ascertained only with a fair degree of accuracy.

The antero-posterior diameter of the pelvic brim gives the most practical indications for the anticipation of Cesarian section. The old limit of seven and a half cm. has been gradually extended so that at present many operators consider eight and a half cm. or even nine cm. in a generally contracted pelvis as indicating the operation. It is a matter of indi-

*Read before the San Francisco County Medical Society, September, 1907.

vidual opinion as to the best way to manage these doubtful cases. Personally I believe the best results not only in regard to the life, but in regard to severe injuries to both mother and child, can be obtained by placing these patients in a properly equipped hospital, permitting them to demonstrate for a reasonable time the effect of labor pains, and when these fail to cause engagement of the presenting part to resort at once to Cesarian section, omitting all preliminary operative procedures which might tend to contuse or infect the uterus or its contents. It is needless to state that the approximate size and the correct diagnosis of position of the fetal head as well as the size and character of the maternal pelvis should be known in advance and that the fewest possible number of examinations should be made during labor.

Referring to the records of 685 confinements which have been under my care at the San Francisco Maternity, the maternity ward at the University of California Hospital and in private practice, I find that in addition to the emergency Cesarian section mentioned above five patients have presented during pregnancy indications for operation. As this series does not include consultation cases and as the above mentioned institutions are comparatively new and have not as yet attracted unusual cases from the profession these records should illustrate fairly well the frequency of the indications for Cesarian section. I desire to report and to analyze these cases, as they present many interesting facts for discussion.

Case 1. Relative indication. M. W. Single 1 Para. Age 18. Applied to the San Francisco Maternity Sept. 1st, 1905. When two years of age her left hip joint had been excised at the St. Luke's Hospital. She did not walk until one year later. For the past few years she had suffered with chronic bronchitis. She did not know the date of her last menstruation. Examination. Patient was five feet three inches tall, well nourished, walked with a marked limp. The physical examination of the chest was negative. The abdomen was enlarged to about the 32nd week. Child in L. O. A. position gave evidence of already being too large for the head to engage in the brim. The pelvic measurements were as follows: External, between spines 22 cm., crests 24.5 cm., left oblique 19.5 cm., right oblique 19 cm., external conjugate 17.5 cm., tuber ischii 8.3 cm. Internal, a marked flattening of the left side of the pelvis could be palpated, true conjugate 7.6 cm. The left extremity was 7.5 cm. shorter than the right. There was a profuse leucorrhea, which later was found to be free from pathogenic germs. Diagnosis, Coxalgic pelvis. The patient was given a simple cough mixture and requested to take cleansing douches. She continued well except for her cough and entered Lane Hospital December 9th, 1905. For four days the cervix was treated daily with 50 per cent solution of argyrol, and she was given daily bichloride douches. There was such evident disproportion between the brim of the pelvis and the fetal head that operation before the onset of labor pains was decided on. The usual median abdominal incision was made through the umbilicus as a mid point, and an eight-pound male infant delivered through an incision in the anterior wall of the uterus. The time of delivery was forty-five seconds, which is, I believe, a more rational procedure than the ten-second operation advocated by some operators. On account of suspected tuberculosis and at the request of the patient the fundal end of each tube was resected to prevent future conception. The patient developed a post-operative pneumonia, but recovered and left the hospital with her baby four weeks later. Subsequently tubercle bacilli were found in her sputum. The baby was well nourished. It was 52 cm. long at birth, and the biparietal diameter was 9 cm.

Case 2. Absolute indication. F. V. 1 Para. Age 29. Dwarf. Applied to the San Francisco Maternity January 25, 1906. Height four feet. Pelvic measurements: Inter spinous, 22.5 cm.; inter cristus, 23.5 cm.; left oblique, 19.5 cm.; right oblique, 19 cm.; external conjugate, 14.5 cm.; true conjugate, 4 cm. Diagnosis: Richitic flat, justo minor pelvis. Two weeks before term we lost track of this patient, but learned subsequently that she had been delivered by a local surgeon. Mother and baby survived the Cesarian section.

Case 3. Relative indication. Mrs. I. E. 1 Para. Age 25. Applied to the San Francisco Maternity August 15, 1906. English woman of the lower class. Had always been a drudge and in childhood had worked long hours carrying coal and water. Pelvic measurements: Inter spinous, 22 cm.; inter cristus, 26 cm.; left oblique, 21 cm.; right oblique, 21 cm.; external conjugate, 18 cm.; true conjugate, 8 cm. Diagnosis: Simple flat pelvis. Two weeks before expected labor, patient entered Lane Hospital. She was having strong labor pains, and as the head gave indications of engaging in the brim operative interference was not attempted. After twenty-four hours of hard pains she succeeded in delivering herself spontaneously of a six and a half-pound girl baby. The baby was in good condition. The biparietal diameter was 8.5 cm.

Case 4. Relative indication. Mrs. E. N. 1 Para. Age 28. Applied to the San Francisco Maternity April 21, 1907. When seven years old her left hip joint had been excised. Pelvic measurements: Inter spinous, 23.5 cm.; inter cristus, 25 cm.; left oblique, 20 cm.; right oblique, 19.5 cm.; external conjugate, 18.5 cm.; true conjugate, 9 cm. Diagnosis: Generally contracted pelvis. This patient was informed that she could possibly give birth to her child without operation, and she was requested to enter the University of California Hospital. Fearing to attempt labor she applied to a local surgeon and was delivered successfully of a nine-pound girl baby by Cesarian section at the onset of labor pains.

Case 5. Relative indication. Mrs. M. 2 Para. Age 35. Private patient. Some years previously she had been delivered of a live child after thirty-six hours of labor pains. During this delivery three operators had attempted high forceps and had about decided to perforate the head when one attendant

succeeded in dragging the child through the canal. The child lived, but the pelvic organs of the mother were severely damaged. A vagino perineal fistula still persists. During the present pregnancy her attendant had attempted to induce labor at about the thirtieth week. Two weeks later, April 24, 1907, as her physician had left the city for his vacation, the patient applied to me for treatment. The bag of waters had just ruptured. This fact caused me to proceed with the induction of labor, although had I seen the patient earlier I should have recommended Cesarian section at term. Labor was induced by means of Voorhees bags, and a still-born male infant was delivered by a very difficult breech extraction. The child weighed three and a half pounds, the biparietal diameter was 7.5 cm., and along the left parietal and frontal bones was a very deep promontory groove. While under an anaesthetic it was found that the maternal pelvis was contracted latterly to a marked degree and that the promontory, which was high up, projected sharply forward, contracting the true conjugate to approximately 7.5 cm. The external measurements were as follows: Inter spinous, 19.5 cm.; inter cristus, 25.5 cm.; left oblique, 21.5 cm.; right oblique, 24.5 cm.; external conjugate 20½ cm.; between tuberosities, 7.5 cm. Diagnosis: This pelvis was of a masculine, funnel-shaped type. The mother recovered, but still suffers with an incompletely involuted uterus.

It is interesting to note that in this series of nearly seven hundred confinements, aside from the emergency operation of Cesarian section to combat a medical complication, no indication for operation was noted, except pelvic contraction. From careful measurements of the pelvis one patient was found with the absolute indication for Cesarian section, and four patients with the relative indication. Of the three patients coming to Cesarian section the mothers and babies survived. The only patient who attempted the effect of labor pains succeeded in delivering herself, while the only fetal death occurred when premature labor was induced.

Discussion.

Dr. Sherman: The subject is an interesting one, not only for those who practice obstetrics, but for all who have to do with the growing pelvis, and in my life I have had to deal with the pelvis of the growing individual. In two of the cases which Dr. Spalding reported he spoke of the tuberculous hips and the resulting deformity of the pelvis. I have excised a great many hips and have been dealing with the subject of tuberculosis for many years. I have not thought of the future of the patient so far as pelvis shape was concerned, but have gone wide of disease and so have interfered with the lines of ossification where the ischium, ilium and pubis meet. This very probably may have interfered with the breadth of the os innominatum. It is an interesting question and I would like to ask, do the children who have hip joint tuberculosis and go on without operation have better pelves than little girls who come to operation and have to have excision of the head of the femur and acetabulum? That question should be thought of by the orthopedist, or whoever has to decide for or against excision. There is another condition which may or may not deform the pelvis. Sociosis is a disease which produces a deformity of the spinal column with collateral deformities of the ribs. I have seen cases where scoliosis had produced not only the deformity of the spinal column, but some distortion of the pelvis. There is the question, then, whether an individual with this distortion of the pelvis could go on and become a mother. Again, I have had to examine young women who had had scoliosis and who afterward wished to marry and the question has come up whether they could marry with the expectation of normal or safe deliveries if they became pregnant. I never have made a pelvic examination of such a person, but I have often thought that I would like to find if a moderate scoliosis was likely to produce a deformity of the pelvis so that the individual could not safely be delivered of a child. I have known of a good many young women whom I have treated as young girls for scoliosis who have married and had children in the normal way.

Dr. Spalding, closing discussion: With regard to what Dr. Sherman has said of hip joint excision, I recall a patient who had her hip excised at the age of two. The x-ray plate, taken when the patient was eighteen, showed the failure of the development of the left side of the pelvis. The deformity was due, I believe, to the operation, and the effect it had on the development of the primary bone centers of the os innominatum, together with the later effect caused by the weight of the body. With regard to the point about scoliosis, I have never met with a patient having a contracted pelvis due primarily to a marked scoliosis. Undoubtedly patients with moderate degrees of scoliosis must go through labor without trouble or we would have noticed this condition more often. I do not think it a point well taken to warn patients against marriage or to frighten them unnecessarily simply because they are treated for scoliosis in childhood, but I think they should be warned that when they do become pregnant they should call their physician's attention to the fact of the condition of the spine. There is too much latitude in warning patients against marriage for all sorts of conditions. I think medical science is sufficiently developed to meet these conditions and particularly well adapted to cope with the deformities of the pelvis.

FILLING OF BONE CAVITIES.*

By JAMES T. WATKINS, M. D., San Francisco.

It has long been recognized that bone cavities become sooner or later infected, and that they form a menace, not only to primary union, but also to the subsequent healing of the overlying structures. Attempts have been made to fill them with non-absorbable substances, such as amalgam and cement; and with a number of absorbable substances. Among the latter the autoplastic group—blood clot, skin and periosteum and muscle flaps—have been advocated respectively by Schede, Neuber and Schulten. The heteroplastic group, including the fresh young animal bone of McEwen and Poucet, the decalcified bone chips of Senn, and the plaster of Paris compound of Rosenstirn, have each found its warmest advocate in its inventor. No one method has proved universally satisfactory.

The object of the present paper is to direct attention to a new member of the heteroplastic group,

*Read at the Thirty-seventh Annual Meeting of the State Society, Del Monte, April, 1907.

the iodoform bone plug of von Mosetig-Moorhoof. Dr. James E. Moore of Minneapolis was the first advocate of the iodoform bone plug in this country. I believe that my own case was the first in which it was tried in this section.

The mass was said to have the following characteristic:

(1) It remained solid at body temperatures.

(2) It dissolved at a temperature of 120° F., 50° C., without losing its character.

(3) It was locally non-irritating when introduced into the body.

(4) It was absorbed so slowly as to be non-toxic.

(5) As it was absorbed, its place was taken by organized tissue.

(6) This new tissue either was or very soon became infiltrated with the salts of lime.

In a recent communication von Mosetig-Moorhoof says, "Gradually I arrived at the conclusion that the organism would tolerate only a complete hermetic closure of an aseptic cavity with an antiseptic filling." He prepared such a filling in the following way: Under the strictest asepsis equal parts of spermaceti and sesamoil are melted in an evaporating dish, filtered into a Florence flask and sterilized in a water bath. Next 40 grams of powdered iodoform are put into a sterile flask and 60 grams of the hot mixture added under constant agitation. The flask should not be more than ¾ full, and shaken constantly till the mass solidifies. It is then closed with a sterile rubber stopper. The melting point of the plug is 45-48° Celsius. To use the plug, heat the flask again on the hot water bath, never allowing it to get above 55° C., and after shaking well, pour directly from the flask into the wound.

The preparation of the bone cavity comes next. A flap of soft parts and periosteum is turned back, and then all diseased tissue down *into* sound bone is carefully removed. In order that the mass may run into all the canaliculi and bone crevices, the latter must be absolutely dry. If the liquid mass is run in along the sides of the cavity first, its greater specific gravity will cause the little drops of blood at the bottom of bone crevices to be floated upward upon it; so that when the mass has hardened they can be wiped off its surface with a sponge. While filling the cavity such posturing of the part is required as shall enable advantage to be taken of the laws of gravity.

J. S., aged 14, was referred to me from Ferndale, Humboldt County, by Dr. E. Hammond on January 13th, 1903. He had several discharging sinuses in the lower end of his right tibia, following an acute osteomyelitis dating from March in the preceding year.

February 9th, the tibia was opened through a 5-inch incision on its antero-internal aspect, and a sequestrum 2½ inches long removed. A great deal of porous bone was curetted out as far down as the epiphyseal line. Sinuses leading to the surface were curetted and enlarged. The whole wound was drenched with pure carbolic acid for a minute and a half, washed with alcohol and packed with alcohol gauze.

April 6th, the wound in the tibia was thought to have decreased to about one-half its original size; sinuses had closed; granulations looked healthy. The boy was sent home with instructions to occasionally touch the wound with carbolic, to pack with alcohol gauze, and to report in 6 months.

As a matter of fact, it was two years before I saw him again.

June 5th, 1905, he entered St. Luke's Hospital. The boy had grown several inches since I last saw him. A tremendous depressed scar now appeared at the site of the old operation, and in its center a sinus, which discharged a very little watery pus.

June 6th, the scar was laid open by free incision and the entire old wound cavity, which was full of fibrous tissue, curetted out. It was thought subsequently that the remnant of a sequestrum at the bottom of the sinus might have been located by means of the X-ray. The oozing was stopped by hot water compresses and adrenalin and dried with alcohol, and, I think, ether. The cavity was next filled with Morhoff's mass, which had been heating on the hot water bath. The soft parts were then brought together over the mass with sutures of silkworm gut. To release the tension on the sutures, an incision was made on each side of the primary wound, parallel to it and an inch away from it. These lateral incisions were packed. The wound did not heal by first intention, so on. July 1st, it was again curetted and again filled with the mass. About this time Dr. Moore visited San Francisco. He advised me not to disturb the mass, even though the wound should not heal per primum. Again I failed to get union in the old scar tissue, but this time the mass was not interfered with. The wound was simply dusted with a dessicating powder, and covered with sterile gauze.

September 28th, the patient went home.

In May last, Dr. Delamere wrote me that the soft parts had closed over the mass, and the leg appeared to be perfectly well.

In January of this year, through Dr. Delamere's kindness, the accompanying X-rays were taken, and at the same time the boy's mother sent me the picture here presented.

In the letter which accompanied the photo she said: "The new scar is much smaller in every way than the old one, and the depression still present seems to be filling up slowly. Jule and I think the second operation was worth while, and were we in the same place again, we would have it done just the same."

This case is not reported as an ideal result of its kind, but to show how much better is even a partial result by this method than what one may expect in all but the very exceptional cases submitted to the older procedures.

The late Professor von Mosetig-Moorhoof performed this operation successfully more than one thousand times. For this reason it would seem fair to ascribe failures with the method to technical defects rather than to the procedure itself.

PRELIMINARY REPORT ON A NEW PLASTER COMPOUND FOR PERMANENT SURGICAL DRESSINGS.

By RAYMOND RUSS, M. D., San Francisco.

It is with some hesitation that I venture to make a report on this subject. It has occupied my attention for the past six months, and, while I can appreciate the value of this new plaster compound and can see many ways in which it is an improvement on our old method, at the same time I have not com-

pleted my labors, as I will later point out to you. The adptation of a reaction employed in the mechanical arts and slightly known to general chemists, as it has been protected by many patents, to the usages of surgery, has been a matter of extreme difficulty. Information has been meager and hard to obtain, and the subject has taken me into the literature of various processes of a purely mechanical nature. My studies have given me a great regard for those compounds which, also borrowed from the mechanical arts, have been used with such facility in surgery.

The most conspicuous of these substances is plaster of paris, the general employment of which has marked an important advance in the treatment of fractures. The advantages of an accurate coaptative dressing in the treatment of fractures of the limbs are so great that one who has once learned to handle plaster will certainly prefer it to all other splint materials. Nevertheless there are some objections to the use of plaster and I will endeavor to bring these out in the discussion of the compound which forms the subject of this paper. I would call your attention to one fault, to overcome which was the primary object for undertaking this investigation.

The Roentgen ray penetrates plaster of paris with difficulty, and while it is sometimes possible to secure a good radiograph or make a satisfactory fluorscopic examination, the method is far from being satisfactory as a routine measure. The advantages of the Roentgen ray in the diagnosis of fractures and in the accurate reduction of bone fragments can not be denied. The surgeon is only too glad to avail himself frequently of this help, and as time passes we will rely more and more on this most efficient aid. To obtain, then, a coaptative dressing which would be easily penetrable to the X-ray was the first requisite.

In the search for a compound which would answer my purpose I conducted experiments with water-glass, starch, dextrin and the many substances which have been recommended in the past, but which are now not usually employed. These substances all harden very slowly, and even when the process is ended their use is not very satisfactory. Plaster of paris is far their superior in that hardening consists in a definite chemical reaction, a crystalline salt being formed. This setting can be facilitated by the use of heat or by the addition of salt or alum. It is accompanied by slight expansion and the evolution of heat. There are few substances which, like plaster, possess this power of recrystallization; analogous reactions are afforded by the oxichlorides of zinc and of magnesium.

It is generally recognized by physicists that the penetrability of the Roentgen ray for metals is in inverse proportion to their atomic weights. The nonmetallic substances with which metals are combined do not seem to influence this proposition. The atomic weight of calcium is 40, that of zinc 65, and of magnesium 24. One could, therefore, conclude that the penetrability of magnesium compounds would be much greater than that of calcium.

In 1869 Sorel first called attention to the fact that the oxichlorid of magnesium had the remarkable power of setting like plaster-of-Paris when mixed with water. He found that the reaction produced a material much harder and more durable than plaster-of-Paris, so hard in fact that it was capable of taking a polish. The resulting compound showed great tenacity; it could be mixed with fifteen or twenty times its weight of other dry powders without losing this power of setting when water was added. Practically the reaction is accomplished by making a strong solution of magnesium chlorid into a thick paste with magnesium oxid. The mass soon hardens and sets and is found to contain an oxichlorid of magnesium ($MgCl_2$. $5MgO$) associated with a varying quantity of water of crystallization, the amount of water depending on the temperature at which the reaction has taken place. The value of the reaction was quickly appreciated and numerous companies for manufacturing the material were soon formed. The first patents on the process followed quickly on its discovery. At the present day it is used considerably, under a great variety of trade names, for the manufacture of flooring, wainscoting, etc.

For this purpose magnesite, native magnesium carbonate, is employed. It occurs in Austria and Greece in extensive deposits and is also found in California. The magnesium carbonate is first crushed and then calcined at a temperature of 800° to 900°C in rotary pans. Carbon dioxid begins to be given off at a temperature of 600°C and this is apparent by a slight ebullition on the surface. If the temperature is carried too high the power of setting with magnesium chlorid is lost. This substance is mixed for commercial use with about six parts of sawdust or sand and then made into a thick paste with a strong magnesium chlorid solution.

It is hardly necessary to tabulate my various experiments in the adaptation of this reaction to surgical usage, but it will suffice to give simply the practical results of the method. It must be remembered that we are dealing with a reaction which is wholly unlike that of plaster-of-Paris. For instance, in the latter, we use table salt or alum to hasten the reaction, while with the magnesium preparation salt is practically inert and alum slows the reaction instead of hastening it. It has been found, however, that the stronger the solution of magnesium chlorid the quicker the reaction, but here again caution must be observed, for this is a deliquescent salt and its presence in excess will cause our finished cast to "weep." If such deliquescence does occur it can be readily stopped by rubbing on a little dry magnesite.

The magnesia of the drug stores, both the magnesia usta and the magnesia ponderosa, cannot be employed. They are prepared by thorough ignition of the magnesium carbonate and do not set when magnesium chlorid solution is added. Dry heat is a most efficient aid in promoting the rapidity of the reaction. In a general way we may say, the greater the degree of heat employed the quicker the final result, although at very high temperatures the plas-

ter will sometimes crack. It does not become brittle by heating as is the case with plaster-of-Paris. Like plaster-of-Paris a slight expansion occurs in the setting of this magnesium compound and chemical combination is also accompanied by the evolution of a small amount of heat.

I have employed both the California and the imported magnesite, and my results are equally good. The imported material is made by the Concordia Chemische Fabrik auf Actien, Stassfurt, Germany, and the local product manufactured by the Magnesia Products Company, of West Berkeley, Cal. For the making of splints the following technic is employed. Bandages of crinoline are impregnated with calcined magnesite by means of a plaster-of-Paris bandage machine. I prefer a width of three to four inches and a length of three yards. A stock solution of commercial magnesium chlorid is prepared. This should have a specific gravity of 1.250 (28.8 Beaume) and is obtained by dissolving 20.44 parts by weight of magnesium chlorid in 16 parts of water. In our work the best results have been obtained in this strength. If any sulphates are present in the solution they should be precipitated by barium chlorid, as the reaction is rendered slower by their presence. A little of this solution is poured into a container and the bandage immersed in it until bubbles cease to rise. The surplus solution is then squeezed out and the roller applied smoothly, directly on the skin or over sheet wadding as the surgeon may prefer; the magnesite cream is worked in with the hands, avoiding if possible the use of any additional solution. Dry calcined magnesite is then added and rubbed about until the moisture is well taken up, for the finished cast will "weep" if magnesium chlorid is present in excess. If this occurs it can be readily remedied by rubbing on a little dry magnesite. For ordinary work two layers of bandage will be all that is required. The beginner is almost certain to make his splints of this material too thick. A little practice will suffice to show what great rigidity may be obtained in a very thin layer.

There remains but to sum up the advantages of this new magnesium compound:

Penetrability.—The Roentgen ray penetrability as compared with plaster-of-Paris has been estimated by taking equal thicknesses of the set plasters, placing them side by side and radiographing them. As near as can be judged by color, the penetrability of the magnesium compound is about twice as great as that of the calcium. As I can procure the same rigidity with casts of from one-half to one-third the thickness, we may say that the penetrability of our preparation is from four to six times that of plaster-of-Paris.

Hardness.—We have no means of estimating hardness accurately and so I show specimens of the material and of plaster-of-Paris also, that you may make your own deductions. It is only necessary to repeat that our magnesium compound is used in making flooring and is capable of taking a polish. By employing a knife with a file edge I find no difficulty in cutting it. As an aid in cutting hydrochloric acid may be used, but I have not found this often necessary.

Tenacity.—Our compound is extremely tenacious and it will be only necessary in proof of this to repeat Sorel's statement that it may be mixed with twenty times its weight of inert substance without losing its setting qualities. In thin layers it is also quite elastic, which is an advantage in its favor. It is not brittle and does not chip and break along its edges as does hard plaster.

Weight.—Volume for volume our magnesium compound weighs 1.3 to 1 of set plaster-of-Paris; yet the same strength can be obtained in so much thinner layers that our casts are much lighter. In Colles' fracture in adults I have used magnesite splints, extending from the fingers to the elbow, which weighed but three ounces. This great decrease in weight over our old method is much to the advantage of the patient.

Moisture.—Plaster-of-Paris casts break down and become soggy when exposed to moisture, as about a fenestrum where an open wound is being treated, for plaster is somewhat soluble in water. Moisture has apparently no effect on our magnesium compound.

Setting.—The setting of all cements is divided into two portions, the superficial setting, which may be defined as that state in which the compound is of sufficient hardness to maintain its shape, and the final setting, which marks the end of the reaction. I have found the final setting of magnesium oxichlorid to be a little more rapid than that of plaster-of-Paris. My observations have been made on blocks of the materials of equal volumes and under the same conditions. It is in its rapid superficial setting that plaster-of-Paris greatly excels. It should be borne in mind, however, that these excellent results have been achieved by a careful study of the temperature of calcination and the degree to which it should be carried.

While the casts I here show were made with commercial magnesite, I am obliged to use heat in order to obtain a quick superficial setting. A quick action is not wanted commercially and there has previously been no demand for such a product. I am now conducting experiments with this end in view. A constant high temperature is maintained by an electric furnace and I am testing the reaction after varying degrees of temperature and various lengths of time.

Note.—I regret to add at this time that my labors have thus far proved futile. Variations in the temperature of calcination have made no difference with the time of setting. Combinations with other ingredients have been tried, but where a quick superficial setting was obtainable it was at a great loss of tensile strength. As I have noted above, a fairly rapid superficial setting may be obtained by heat, but when it is imperative to secure a quick setting, as in some fractures, I prefer to cover my

magnesite dressing with a muslin bandage and then apply over this a thin layer of rapidly setting plaster-of-Paris. On the next day this superficial plaster and the muslin bandage are torn off, leaving a hard, permanent cast.

SOCIETY OF EYE, EAR, NOSE AND THROAT SURGEONS OF SAN FRANCISCO.

Dr. Pischel presented the following case: Case of Iris Cyst. A boy 13½ years old. About five years ago somebody struck the patient's right eye with his head, tearing the eye ball, where there is now a white spot in the cornea. Two months ago a black spot was noticed on the brown of the eye, which since then has somewhat increased in size. Status presens: fundus of both eyes normal:

Vision left eye ∜ 5/3 D = E Javal 0.5 horiz

Vision right eye ∜ 5/7 ∜ 5/8; + 0.75 ∜ 5/6 D= Javal ∛ 0.25 horiz.

The lower half of the iris is occupied by an oblong tumor nearly touching the cornea, pushing the pupil upwards.

Dr. Pischel then showed to the members how the translucent tumor is covered with a thin layer of pigment.

Second case presented by Dr. Pischel. Piece of steel in eyeball.

This man came to me five weeks ago with the following history: Three days before while in a standing position chiseling off an iron bolt, something flew into the left eye. It was painful for a while but is rapidly getting better.

Right eye, fundus normal. Vision of right eye: 5/3 D = E Javal 0.5 horiz. Vision of left eye 2/60 at daylight, (eye too sensitive to artificial light). Javal 0.75 horiz, slightly irregular. Slight ciliary injection. Just above the center of the cornea a gray scar; a tear in upper part of iris which is bulging at that point. In posterior cortical of lens a few gray radii; near pole seems to be an opening. Just below and behind this latter, slightly swinging at movement of the eye, was seen a glittering foreign body, horizontal, apparently about 1x2½ mm. Disc not quite clearly to be seen.

This was one of the cases in which one may discuss whether it is better to remove the foreign body through the anterior chamber and cornea, or through a fresh opening in the globe through the sclera. For a number of years I have contended that the latter method is preferable, that a clean opening in the sclera with a Graeffe knife and the introduction of a clean magnet tip is less injurious than to pull the foreign body forward into the anterior chamber and through a wound in the cornea, especially when the foreign body has been in the eye long enough for the entrance to be firmly closed. By the latter method the foreign body is liable to pull a large part of the iris with it.

Outward and downward, about 8 mm. from the limous a cut was made in the conjunctiva and afterwards with a Graeffe knife in the sclera. A fine point of Haab's magnet was now introduced into the cut about 5 mm. deep. When withdrawn the foreign body was on it. It was a thin glittering piece of steel 1 mm. x 3. The wound of the conjunctiva was closed with a rattail suture.

The irritation soon passed off. The opacities of the lens may have cleared up a little. The vision four days after the operation 2/60. One month after the operation 2/60: + 6 2/22.

Discussion on first case:

Dr. Nagel: I saw this case about two months ago. I was told that he had been to various men and that the majority had agreed that it was a case of sarcoma of the ciliary body. I looked upon it as a cyst for various reasons, which I will enumerate, but I agree that there was an element of doubt about the nature of the tumor-like formation. To my mind it is a settled question now that it is a cyst. There is a grayish part toward the center and we now get the choroidal reflex through there with the ophthalmoscope from the front distinctly. My reasons for considering it a cyst are, firstly that Fontana's space is not occupied by this protuberance. Secondly the iris is not as we would expect in sarcoma, grown through. Rather than that, it gives the appearance of being pushed aside. Thirdly, it is ago. I was told that he had been to various men a uniform protuberance giving the impression as if there were watery contents behind. Further, I failed, in spite of the most painstaking examination with the Zeiss-binocular loop to discover any blood vessels, which would be most unusual in sarcoma. Somewhat paradoxical, since the protuberance has grown, I find the tension is less than it was at that time, which would also rather confirm the idea that it is a cyst. Apart from the growing through Fontana's space, another mode of sarcoma of the ciliary body, or maybe of the posterior surface of the iris, is to grow through the pupil. If it were possible that it were purely sarcoma of the iris, then I must say it would be very hard to understand why it should not have involved the iris instead of pushing it aside. There is some difficulty about the history. As we all know we usually think of cyst being due to a perforating injury of the eye ball. According to the history the child received a blow six years ago, but I believe he never found reason to complain to the mother about it, and it was about two weeks later when the mother noticed a slight speck and thought it must be connected with the injury, and she took him to an oculist. It therefore seems unlikely to have been a perforating injury. The child did not complain of pain. It is either a congenital cyst or it is that other formation of cyst first described by Schmidt Rimpler, due to obstruction of a crypt and pushing aside the anterior (and posterior) layers of the iris. I am inclined to think that it is of the latter kind. I do not think that it is due to the injury. With regard to the therapy, I would excise the cyst, i. e., would endeavor to excise as much as possible. It is not necessary that there should be recurrence even if some of it is left behind. It is not due to implantation of epithelial cells, as in post-traumatic cysts. A partial excision might suffice. If one fears of going too far it would be necessary to desist and repeat it again later. An operation would decide the true nature of the formation absolutely. Left to itself a growing cyst will eventually become detrimental to the eye.

Dr. Cohn: I saw this case five or six weeks ago. I stated then that no absolute diagnosis could be made at the time. It was smaller then and as yet not translucent. I stated that it was a cyst or a growth, and I advised that they have the attending physician observe the case carefully until a positive diagnosis could be made. After looking at it tonight, I think it is unquestionably a cyst, but I do not think one could have formed a definite opinion five or six weeks ago.

Dr. Pischel, closing the discussion: I thank Dr. Nagel for having so carefully gone over the case. The diagnosis seems to me beyond a doubt. The transillumination of the tumor especially with Wurdemann's transilluminator excludes a solid tumor like sarcoma.

Discussion on second case presented by Dr. Pischel of foreign body in eye:—

Dr. Sewall: The most interesting point to me in

this case was the question of whether the foreign body should be brought out through the anterior chamber or through a new incision in the sclera. There, of course, are the two schools, divided on this point. I will not go into their different reasons. My own view is that if the foreign body has done much damage in the anterior parts of the eye, to the iris and lense, I believe that it ought to be brought out through the same channel. I also think we should approach the patient to the magnet slowly rather than switch the magnet on suddenly, and we can often draw the foreign body into the anterior chamber and see whether it is attached to the iris and thereby prevent a prolapse of the iris into the wound. It seems to me that the introduction of the magnet into the eye is to be avoided when possible.

Dr. Nagel: It is an interesting point to see this opacity near the posterior pole of the lense. I have seen in a few cases such traumatic opacities near the posterior pole disappear. It would be interesting to note whether this would be still further progressive.

Dr. Pischel, closing discussion: I cannot help thinking that I would have injured the eye much more if I had drawn the foreign body into the anterior chamber and then through a fresh wound in the cornea. We cannot possibly control the foreign body in its way from behind the lens into the anterior chamber. I do not think there is any danger of pulling any retina with the foreign body through the wound. Even the loss of vitreous is very, very small.

Dr. Nagel added a few words further: I would like to say that from Hirschberg's experience we should not hesitate to operate along Dr. Pischel's lines in this case. The hand magnet is very often by far less risky than the giant magnet. Hirschberg would prefer in a case like this to go behind the ciliary body and make a fresh opening. In suitable cases, he likes to guide the foreign body around the periphery of the lense and extract it from in front. He now uses three different sized hand magnets, making four magnets including Haab's.

Dr. Cohn then presented the following case in connection with Dr. Pischel's second case:

Ralph C., aged 8, was brought to me October 23rd. The day before, while hammering an iron hoop on an anvil, a particle struck the right eye. Examination showed a slight subconjunctival or scleral injection, virtually nothing more than a small red blotch in the nasal sclera, about corresponding to the posterior ciliary region. Palpatation of this region through the closed lid slightly painful. Otherwise no objective or subjective symptoms of any nature. Fundus normal. Vision normal. Dr. Painter, of the Lane Hospital, took a couple of X-ray negatives, which revealed the apparent presence of a very minute foreign body,—so small that it was not recognizable on the wet plates. Dr. Deane had the kindness to work out the localization and found it, not within the eyeball but extra-ocular—somewhere in the upper lid. Manifestly this disconcerting discrepancy called for a new set of exposures and a fresh localization, to which, however, the parents did not consent, for the reason that the few vague symptoms above referred to, disappeared within a few days. The eye has appeared normal ever since. As a very minute foreign body can well be tolerated and as the patient on the other hand can report to me as soon as there is the slightest reaction at any time in the future, I do not feel justified in insisting upon operative interference—the more so as the eye is absolutely quiet, the vision normal and one hesitates about exposing an apparently healthy eye to the unavoidable traumatism involved in groping for a particle as small as the one assumed to be here. It would be interesting and instructive to hear from the members present their experiences with respect to the toleration of foreign bodies in the eye.

Dr. Fredrick: A number of years ago I saw an old man, who was a tool sharpener at the Union Iron Works, and whose eye had been wounded by a small piece of steel. This had penetrated the eye without wounding the lens or causing much disturbance of the vitreous, and I could see it embedded in the posterior part of the eye near the posterior pole. I did not have a magnet at the time, and I do not think that I would have used it anyway. The foreign body was so small, and so far back, that I reasoned that the magnet would do the eye more harm than the foreign body. So it remained for two years, during which time I saw the patient at intervals. The eye remained quiet, and the patient resumed his work. About two years after the accident he died. No doubt the piece of steel was quite clean and the disturbance created by its entrance into the eye very slight owing to the peculiar route it took.

Dr. Sewall: In allowing a piece of steel to stay in the eye, it seems to me that it makes a great deal of difference whether the steel is attached or lies free. I saw a man of 25 with a piece of steel in the retina. It had been there for a number of years. There were no symptoms and the foreign body was lying firmly adherent.

Dr. Pischel: In spite of Leber's Classical experiments there is still a difference of opinion about the danger of a foreign body in the eyeball. A few days before Professor Hirschberg's last visit in San Francisco, I had removed an eye of a little girl who had a piece of dynamite capsule in the eyeball. In discussing this case Professor Hirschberg mentioned that he had several patients under observation who had had for many years such pieces in the eyeball without molestation. On the other hand we know that even many years after a foreign body has entered sympathetic ophthalmia may set in. I have observed one case in which a piece of steel caused repeated irritation and finally necessitated the removal of the eye. A boy about ten years old was brought to me with the history that a piece of wood had struck his eye a year previous. After repeated irritations the eye became entirely blind, the fundus was invisible on account of opacities of the vitreous, the fellow eye became sensitive to light, therefore I removed the diseased eyeball and, to my great astonishment (this was before the time of X-rays) I found a tiny bit of steel imbedded in the ciliary body. When I told the patient about my find he remembered that he had hit an ax with a hammer, but had supposed that a piece of wood had hit the eyeball.

NEW AND NON-OFFICIAL REMEDIES.

(Continued from December.)

KASAGRA.

A fluidextract said to conform to drug strength to the requirements of the U. S. Pharmacopeia for fluidextracts. It is prepared with especial care, the drug being extracted with a menstruum containing no alcohol. The preparation is said to contain 0.05 per cent. of alcohol.

Actions and Uses.—Kasagra is recommended as an especially palatable preparation of cascara, owing its laxative effects to this drug alone. Dosage.—1 to 2 Cc. (15 to 30 minims) four times a day, half an hour before meals and at bedtime. Prepared by F. Stearns & Co., Detroit, Mich.

KOLA, Stearns.

Each 30 Cc. (1 fluidounce) is said to represent 31 Gm. (480 grains) of fresh kola nut. It contains 23.5 per cent. of alcohol.

Actions and uses.—Kola seeds contain from 1.5 to 3.6 per cent. of total alkaloids, of which from 1/100 to 1/40 is theobromine and the rest is caffeine. About one-half of the caffeine is combined as kolatannate of caffeine. The actions and uses of the remedy are essentially the same as those of caffeine. It is probable that the kola-tannate is not so active as free caffeine. Dosage.—2 to 4 Cc. (½ to 1 fluidram) three times a day. Prepared by Frederick Stearns & Co., Detroit, Mich.

KRESAMINE.

A clear watery solution of 25 per cent. of trikresol (which see) and 25 per cent. of ethylene diamine.

Actions and Uses.—Kresamine is a powerful bactericide, with a claimed minimum of toxicity. It is said that the bactericidal effect of the cresol and its power of penetrating the animal tissues are greatly enhanced by the presence of ethylene-diamine and it is claimed to be far less irritating when used as a wet dressing than other antiseptics. It is useful in all cases where an active bactericide is required and particularly when the microbes are in an albuminous menstruum. The preparation is not so dangerous as carbolic acid. It has been recommended for the treatment of ulcers, eczema, lupus and other skin affections. Dosage.—It is used only in dilutions (2 to 25) containing 2 per cent. or less of each of its active constituents. Kresamine may be applied in the form of ointment. A dilution containing 2 per cent. of each ingredient was formerly marketed under the name of "Ethylene-diamine Trikresol Solution." This was used without dilution. Prepared by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

LAC BISMO.

A mixture said to consist of bismuth hydroxide and bismuth subcarbonate, suspended in water, in a finely divided state, and containing 0.16 Gm. (2½ grains) of the salts in 4 Cc. (1 fluidram).

Dosage.—4 to 16 Cc. (1 to 4 fluidrams) as directed. Prepared by E. J. Hart & Co., Ltd., New Orleans, La.

LACTOPHENIN.

Lactophenin, $C_6H_4(OC_2H_5)(NH.CH_3.CHOH.CO)=C_{11}H_{15}NO_3$, is a compound differing from acetphenetidin (phenacetin) in that the acetic acid group is replaced by the lactic acid group, ($CH_3CHOH.CO$).

Actions and Uses.—The effects of lactophenin are similar to those of acetphenetidin (phenacetin), over which it possesses the advantage of greater solubility in water. Dosage.—0.5 to 1 Gm. (8 to 15 grains), in wafers or capsules. Manufactured by Chem. Fabrik, vorm. Goldenberg, Geromont & Co.

LAMINOIDS FERRUGINOUS (NASCENT).

Each tablet contains iron sulphate and sodium bicarbonate in quantities equivalent to those of pilulae ferri carbonatis (Blaud's pills), but the two salts are separated into two layers so that the formation of ferrous carbonate will occur only when the tablets are moistened. An excess of bicarbonate is present to neutralize the acid in the stomach.

Dosage.—The same as Blaud's pills. Prepared by Schieffelin & Co., New York.

LENNIGALLOL.

Lennigallol, $C_6H_3(CH_3CO_2)_3=C_{12}H_{12}O_6$, is triacetylpyrogallol obtained by replacing the hydroxyl groups of pyrogallol with acetyl groups.

Actions and uses.—Lennigallol is said to be nonpoisonous and non-irritating, but a mild and painless corrosive. It is introduced as a substitute for pyrogallol in psoriasis, lupus, acute and subacute eczema of children and other skin diseases. Dosage.—In 5 to 10 per cent. ointment with zinc oxide. Manufactured by Knoll & Co., Ludwigshafen a. R.

LIQUOR TRITICI.

A solution of which each Cc. (15 minims) is said to represent 1.75 Gm. (27 grains) of triticum repens in a menstruum containing 23.5 per cent. of alcohol.

Dosage.—4 Cc. to 16 Cc. (1 to 4 fluidrams) at intervals of from two to four hours. Prepared by Parke, Davis & Co., Detroit, Mich.

LITHIUM ICHTHYOL.

A lithium derivation of ichthyol. It is a dark brown mass, somewhat more consistent, but otherwise resembling ammonium ichthyol in appearance.

Actions and Uses.—It is an antiseptic and bactericide. It is recommended as a wound antiseptic and in syphilis. Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

LYCETOL.

Lycetol, $\begin{matrix}{}^{/CH(CH_3).CH_2\backslash}\\ NH \qquad NH.COOH.CHOH.\\ {}_{\backslash CH_2.CH(CH_3)/}\end{matrix}$ $CHOH.COOH=C_{10}H_{20}O_6N_2$ is a tartrate of a methyl derivative of diethylenediamine (piperazine).

Actions and Uses.—Lycetol is claimed to be a serviceable diuretic and uric acid solvent. It is said to be free from disturbing effects on the stomach and to be well tolerated for long periods. Dosage.—1 to 2 Gm. (15 to 30 grains), well diluted, and preferably in carbonated water, sweetened with sugar if desired. Manufactured by Farbenfabriken, vorm. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

LYSIDIN.

Lysidin, $\begin{matrix}CH_2.N:\\ |\qquad\quad C.CH_2=C_4H_8N_2,\\ CH_2.NH.\end{matrix}$ is a monatomic base derived from ethylene diamine.

Actions and Uses.—Lysidin is said to be a diuretic and is recommended as a uric acid solvent on the theory that, because it forms a very soluble salt with uric acid, it will facilitate the elimination of that substance. It is claimed that it is superior to piperazine. It is recommended in gout, lithiasis and the various forms of the so-called uric acid diathesis. Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

MERCUROL.

Mercurol is an organic compound of mercury with nucleinic acid from yeast, containing 10 per cent. of metallic mercury.

Actions and Uses.—Mercurol does not coagulate albumin; it has marked bactericidal power and possesses the pharmacologic action of soluble mercury compounds. It is recommended as a local antiseptic application and as an antisyphilitic remedy. Dosage.—0.03 to 0.12 Gm. (½ to 2 grains). Manufactured by Parke, Davis & Co., Detroit, Mich.

MESOTAN.

Mesotan, $C_6H_4.OH.COO(CH_2.O.CH_3)=C_9H_{10}O_4$, is the methyl-oxymethyl ester of salicylic acid, analogous to wintergreen oil.

Actions and Uses.—The action of mesotan is similar to that of oil of wintergreen, but it is more

irritating to the skin. Dosage.—Being quite irritating when applied pure to the sensitive skin, it is employed diluted with an equal volume of olive oil, and without friction. Simple application to the affected part, which need not be covered, or, if so, only slightly, suffices to give prompt relief. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

METHAFORM.

A name applied to chlorbutanol (which see). Manufactured by F. Stearns & Co., Detroit, Mich.

MIGRAININ.

A mixture of antipyrine 85 parts, caffeine 9 parts and citric 6 parts.

Actions and Uses.—It is antipyretic and analgesic, combining the actions of its components. Dosage.—0.4 to 1 Gm. (6 to 15 grains) in powder, cachets or tablets, the dose being repeated once or twice during the day. Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

NEUROCAINE.

Each billet contains cocaine hydrochloride 0.05 Gm. (1/12 grain), without excipient. The billets are ⅛ inch long, 1/20 inch in diameter and very soluble. Neurocaine is used for pressure anesthesia or as a local anesthetic in dental practice. Prepared by Schieffelin & Co., New York.

NEURONIDIA.

An elixir said to contain in each 8 Cc. (2 fluidrams) 0.26 Gm. (4 grains) of veronal (diethylmalonylurea in a menstruum containing 35 per cent. of alcohol, with aromatics.

Dosage.—(8 to 16 Cc. (2 to 4 fluidrams). Prepared by Schieffelin & Co., New York.

NUTROSE.

Nutrose is a sodium salt of milk casein, containing 65 per cent. of proteids.

Actions and Uses.—Nutrose is recommended as a non-irritant nutrient in wasting diseases, such as the cachexias in carcinoma, anemia, diabetes, etc., and in acute and chronic febrile ailments, such as pneumonia, typhoid fever and tuberculosis. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

NOVOCAINE.

Novocaine, $C_6H_4.NH_2(COO.C_2H_4.N(C_2H_5)_2,HCl)=C_{13}H_{21}O_2N_2Cl$, is the monhydrochloride of para-aminobenzoyldiethylaminoethanol.

Actions and Uses.—It is a local anesthetic similar to cocaine, but said to be far less toxic than any of the cocaine substitutes. When infected subcutaneously it is said to exert a prompt and powerful anesthetic action, but the effect is not sustained. This may be remedied by the simultaneous injection of suprarenal alkaloid. Novocaine is not irritant. It is recommended in all cases in which cocaine is indicated. Dosage.—For infiltration anesthesia, solutions of 0.25 Gm. (4 grains) novocaine in 100 or 50 Gm. (3.2 or 1.6 ounces) physiologic salt solution, with or without 5 or 10 drops of suprarenal alkaloid solution (1-1000); for instillations and injections, solutions of 0.1 Gm. (15.4 grains) novocaine in 10 or 5 Gm. (150 or 75 grains) salt solution, with or without 10 drops of suprarenal alkaloid solution (1:1000). In ophthalmology, 1 to 5 to 10 per cent. solution and in rhinolaryngology 5 to 20 per cent. solutions are recommended, with the addition of 6 to 8 drops of suprarenal alkaloid solution (1:1000) to each 10 Cc. (160 minims). Internally, owing to its feeble toxicity, it may be given in doses up to 0.5 Gm. (7½ grains) to adults. Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

ORTHOFORM-NEW.

Orthoform-new, $C_6H_3.(COO.CH_3)(NH_2)(OH)$, 1:3:4$=C_8H_9O_3N$, is the methyl ester of meta-amido-para-oxybenzoic acid.

Actions and Uses.—Orthoform-new is a local anesthetic, resembling cocaine in its local action, but not penetrating the tissues on account of its insolubility. It has practically no action on the unbroken skin and produces no irritation except slight corrosion about the place of application. It is somewhat antiseptic and practically non-toxic in the usual doses. It is used internally to relieve the pain of gastric ulcer. Since it acts only on ulcerated surfaces, the relief of pain has been assumed to be evidence of the existence of an open ulcer. It has been applied locally as an analgesic to wounds of every description. It has been used in dentistry, in nasal catarrh, hay fever, etc. Dosage.—Internally, 0.5 to 1 Gm. (8 to 15 grains) in emulsion; locally, in substance as a dusting powder or mixed with milk sugar for insufflation, dissolved in ether and mixed with oil for pencilings, or as salve with wool fat (lanolin), etc. Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

The following articles will be added to the list of new and non-official remedies approved by the Council of Pharmacy and Chemistry:

Benzo-Formol Comp. (H. K. Mulford Co.)
Blandine Comp (H. K. Mulford Co.)
Creno-Bismuth. (H. K. Mulford Co.)
Methyl-Santal. (H. K. Mulford Co.)
Protan. (H. K. Mulford Co.)
Coryfin. (Farbenfabriken of Elberfeld Co.)
Montal. (Farbenfabriken of Elberfeld Co.)
Novaspirin. (Farbenfabriken of Elberfeld Co.)
Taka-Diastase. (Parke, Davis & Co.)
Colalin Laxative. (Rufus Crowell & Co.)
Maltzyme, plain. (Malt-Diastase Co.)
Maltzyme, with cod liver oil. (Malt-Diastase Co.)
Maltzyme, with cascara sagrada. (Malt-Diastase Co.)
Maltzyme, with iron, quinia and strychnia. (Malt-Diastase Co.)
Maltzyme, with hypophosphites. (Malt-Diastase Co.)
Maltzyme, with Yerba Santa. (Malt Diastase Co.)
Maltzyme Ferrated. (Malt-Diastase Co.)

COUNTY SOCIETIES.

SAN JOAQUIN.

The regular meeting of the San Joaquin County Medical Society was held in the office of Dr. R. R. Hammond, December 2, 1907, with the following attendance: Drs. R. R. Hammond, C. R. Harry, S. W. R. Langdon, E. A. Arthur, J. D. Young, F. R. Clarke, Mary C. Taylor, J. P. Hull, A. W. Hoisholt and R. B. Knight.

Nominations of officers for the ensuing year were as follows:

President—E. A. Arthur, nominated by Dr. Hull; S. W. R. Langdon, nominated by Dr. Taylor.

First Vice-President, J. P. Hull.

Second Vice-President, Mary C. Taylor.

Secretary and Treasurer—R. B. Knight, B. J. Powell, B. F. Walker.

Committee on Admissions—Minerva Goodman, Margaret Smythe, R. R. Hammond, C. R. Harry, F. R. Clarke.

Committee on Ethics—A. W. Hoisholt, J. D. Young, J. P. Hull, W. W. Fitzgerald, Hudson Smythe.

Committee on Finance—S. E. Latta, J. J. Tully, H. E. Sanderson.

Trustees—J. G. Thompson, H. W. Taggart, D. F. Ray.

Delegates to State Society—R. R. Hammond, J. P. Hull, Alternates—A. W. Hoisholt, H. E. Sanderson.

No further business appearing, the society adjourned. R. B. KNIGHT, Sec. Pro. Tem.

PUBLICATIONS.

Progressive Medicine, December, 1907. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by H. R. M. Landis, M. D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. Six dollars per annum. Lea Brothers & Co., publishers, Philadelphia and New York.

The Practice of Obstetrics. By American Authors. Edited by Charles Jewett, M. D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Third Edition, Revised and Enlarged. Illustrated. Lea Brothers & Co., New York and Philadelphia. 1907.

I shall speak of the merits of the work first and then of its demerits, even at the risk of leaving a bad last impression in the mind of the reader. At the outset I was very much predisposed in its favor from what I knew of the reputation of Dr. Jewett.

I started to read this book through and very soon began to wonder why the author was duplicating his previous statements. When I reached the chapter on eclampsia it seemed somehow very familiar and I began to think. I took down a copy of Edgar and saw a clear parallelism. It seemed strange that two men could agree so closely in thought and style. Further on I read the chapter on septicaemia and I could almost imagine that I was following Williams; the arrangement was almost identical, and then I turned to the preface and I found that the volume was nothing but a disconnected lot of essays by prominent men, each of whom has better expressed his ideas in another place.

This is not the fault of Dr. Jewett, nor perhaps altogether of the publishers, who are keen business men and presumably aware of what the American physician is willing to pay for. But the result is that our medical literature is not thereby elevated. Beautiful single volumes, as this, are produced to sell; and, when too late, the purchaser finds that they are a rehash of other works or essays edited by some man of prominence. Occasionally a small book will be published with borrowed cuts—for cuts cost money—written by one man, who tries to cover a large field in one condensed volume.

Our American books are on too good paper and too expensively bound for their short life and I personally long for the time to come when we can get them unbound and uncut like the German and French works, each an exhaustive treatise on some limited subject, with special cuts and all extraneous matter eliminated.

This compilation of Dr. Jewett's is no better, nor is it worse, than many others, and its value is equal to one divided by all other such books now on the market.

It is well printed and bound. I only noted one typographical error where, on page 444, the inter cristal measurement is called the inter-costal. It has 37 reduced cuts from the work of Farabeuf and Varnier, and has also used many of the expressions found therein.

The book has excellent chapters on eclampsia, toxaemia, artificial feeding, post partem and placental hemorrhages and muscles of the perineum. The views advanced on episiotomy, the use of ergot and acetic acid in hemorrhage, nitro-glycerin in eclampsia, delivery of the posterior shoulder first, personal use of the patheter, etc., appeal to me as being exactly right.

But I do not think that the perineum should be excluded from a part in labor, nor that the ovary causes menstruation, nor that urea is a valueless test of excretion. Neither do I like to have pressure on the head through the perineum extolled nor traction in the axilla advocated. The advice given to wait four to six hours before putting the child to the breast is not good. There are some other matters that I cannot agree with, but I should not contrast my experience with that of the writers.

Nothing is said of the use of hyocine in labor nor of pubiotomy. The necessity of "chin front" in face presentations is not impressed, nor do I think the pushing of the cord to one side in breech cases even mentioned. Again, from all stated to the contrary, one might do a version hours after the end of the first stage. The relative frequency of multiple births is ignored. Of the obliquities of the head in flat pelves, Nagale's only is mentioned, and very little said of the conservation of the transverse position in such cases.

As was to be expected in a compilation, the book abounds with reduplications, which in many instances do not agree. One man advocates ligating the maternal end of the cord, the other does not. One considers urea a "fairly reliable index" of excretion, the other says it "has been shown to be of little value." Nursing, rigid cervex, haematoma vulvae, abortion, pelvic measurements and placental detachment are all treated twice in more or less extensive articles.

There are ten and a half pages on symphesiotomy, now nearly again fallen into desuetude, and just a half page on pubiotomy. There are twenty-one pages in one place and seven in another on monstrosities, all out of proportion to more important subjects. About four pages are devoted to uterine inversion, its causes, diagnosis and treatment in extenso, one of the rarest of accidents.

Ophthalmia neonatorum is only superficially touched upon and one of its symptoms given is "pain in the eye." Just how we are to gain this knowledge from the little sufferer is not explained. Embriotomy is not correctly defined on page 750. Some of the authors use the metric system and others give the measurements in inches, and this, too, in a third edition of the work.

I have tried to be fair and not unjust in my review. I have endeavored to eliminate any personal bias from every statement. The isolated essays have the merit that the authors' names would lead us to expect and it is with the compilation as a whole that I am displeased. It but adds one more to the already too numerous volumes of this class now on the market. The compilation is not improved by the divergent views expressed by the contributors and has lost the unity and system that the work of one man assures. Any one of them could write a better book and several of them have done so. R. C.

BOARD OF EXAMINERS, DECEMBER SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percentage.
Coll. of P. and S., S. F., Cal	6, 6, 07	80.0
Cooper Med. Coll., S. F., Cal	5, 6, 07	84.1
Cooper Med. Coll., S. F., Cal	5, 8, 07	80.2*
Cooper Med. Coll., S. F., Cal	5, 9, 06	80.2
Cooper Med. Coll., S. F., Cal	5, 8, 07	78.4*
Cooper Med. Coll., S. F., Cal	5, 8, 07	76.5
Univ. of Cal., S. F., Cal	5, 14, 07	86.3
Univ. of Cal., S. F., Cal	5, 14, 07	77.4
Univ. of So. Cal., L. A., Cal	6, 14, 06	82.2
Univ. of So. Cal., L. A., Cal	6, 13, 07	81.1
Univ. of So. Cal., L. A., Cal	6, 13, 07	78.9*
Univ. of So. Cal., L. A., Cal	6, –, 05	77.7*
Univ. of So. Cal., L. A., Cal	6, 13, 07	77.1
Univ. of So. Cal., L. A., Cal	6, 13, 07	76.8
Univ. of So. Cal., L. A., Cal	6, 12, 06	75.8
Bellevue Hosp. Med. Coll., N. Y	6, –, 04	83.6
Bellevue Hosp. Med. Coll., N. Y	5, 9, 98	82.5
Bennett Coll. of Eclec. Med., Ill	5, 2, 02	76.0
Coll. of P. and S., Keokuk, Iowa	2, 26, 90	80.8 plus 5=85.8
Detroit Med. Coll., Mich	2, 29, 76	81.9 plus 15=96.9
Hahn. Med. Coll. of Phila., Pa	5, 10, 99	76.6
Harvard Univ. Med. Coll., Mass	6, 28, 05	93.7
Jefferson Med. Coll., Pa	6, 3, 07	80.9*
Queen's Coll., Belfast, Ireland	7, 27, 04	77.9
Rush Med. Coll., Ill	9, 1, 07	86.9
Univ. Colk Hosp. of London, Eng	7, –, 85	75.2 plus 10=85.2
Univ. of Colo	6, 5, 07	78.3
Univ. of Mich	6, 22, 05	87.8
Univ. of Minn	6, 6, 01	87.9
Univ. of Pa	6, 13, 06	76.1**
Univ. of Toronto, Can	6, 13, 02	86.1
Westminster Hosp. Coll., London, Eng	–, –, 00	78.4

Failed.

Cal. Med. (Ecl.) Coll., Cal	5, –, 06	63.6
Coll. of P. and S., Los Angeles, Cal	6, 18, 07	77.5
Coll. of P. and S., S. F., Cal	6, 6, 07	77.0
Coll. of P. and S., S. F., Cal	5, 17, 06	72.9*
Coll. of P. and S., S. F., Cal	6, 6, 07	65.6
Coll. of P. and S., S. F., Cal	5, –, 04	8.1
Cooper Med. Coll., S. F., Cal	5, 18, 07	71.7*
Cooper Med. Coll., S. F., Cal	5, 8, 07	71.2*
Cooper Med. Coll., S. F., Cal	4, 28, 03	67.2
Univ. of So. Cal., L. A., Cal	–, –, 07	75.6
Univ. of So. Cal., L. A., Cal	6, 14, 06	70.7
Univ. of So. Cal., L. A., Cal	5, 14, 06	67.4*
Univ. of So. Cal., L. A., Cal	9, 3, 04	60.2***
Bellevue Hosp. Med. Coll., N. Y	3, 1, 78	58.2 plus 10=68.2
Bellevue Hosp. Med. Coll., N. Y	3, 1, 80	54.9 plus 10=64.9*
Bowdoin Med. Coll., Me	6, –, 95	80.9 plus 5=85.9
Coll. of P. and S., Ill	6, 15, 06	78.2
Coll. P. and S., Columbia Univ., N. Y	6, 13, 00	71.1
Ensworth Med. Coll. Hosp., Mo	3, 8, 98	61.2
Georgetown Univ., Wash., D. C	–, –, 00	74.7
Hahn. Med. Coll., Chicago, Ill	4, –, 01	64.1
Hahn. Med. Coll., Chicago, Ill	4, 26, 05	52.0
Hahn. Med. Coll., Phila., Pa	5, –, 95	73.2 plus 5=78.2
Howard Univ., Wash., D. C	6, 1, 06	66.4***
Jefferson Med. Coll., Pa	5, 2, 93	57.7 plus 5=62.7
Kansas Med. Coll., Kans	3, 23, 92	46.7 plus 5=51.7*
Louisville Med. Coll., Ky	3, 25, 97	41.1 plus 5=46.1
N. Y. Homeo. Med. Coll., N. Y	6, –, 02	79.8
N. W. University, Ill	6, 16, 04	71.6
Tufts Coll. Med. Sch., Mass	–, –, 05	17.5
Univ. of Ill	6, 4, 07	80.5
Univ. of Ill	6, 4, 07	74.1
Univ. of Iowa	6, 12, 07	73.8
Univ. of Iowa	3, 3, 85	54.8 plus 10=64.8

Univ. of Louisville, Ky	6, 29, 05	66.7**
Univ. of Md	6, 4, 07	74.1*
Univ. of Mich	6, 26, 84	71.2 plus 10=81.2
Univ. of Mich	3, 6, 79	59.3 plus 10=69.3
Univ. of Mich	6, –, 92	69.1*
Univ. of Mich	6, 25, 91	62.9 plus 5=67.9
Univ. of Mich	7, –, 86	56.4 plus 10=66.4**
Univ. of Mo	4, 27, 97	69.7 plus 5=74.7***
Univ. Med. Coll. of Mo	3, 26, 03	47.6
Univ. of Pa	6, 13, 95	76.6 plus 5=81.6*

Osteopathy—Failed.

Amer. Sch. of Osteop., Kirkville, Mo	6, 22, 97	48.7 plus 5=53.7
Amer. Sch. of Osteop., Kirkville, Mo	6, 22, 05	11.6
Central Coll. of Osteop., Kansas City, Mo	6, 22, 05	46.7
Northern Institute of Ohio	6, –, 00	48.3

+ Credit given for years of practice.
* Taken before.

Percentages.

Cal. Med. (Ecl.) Coll., Cal.—0 Passed, 1 Failed.—100% Failed.

Coll. of P. and S., Los Angeles, Cal.—0 Passed, 1 Failed.—100% Failed.

Coll. of P. and S., S. F., Cal.—1 Passed, 4 Failed.—80% Failed.

Cooper Med. Coll., S. F., Cal.—5 Passed, 3 Failed.—37½% Failed.

Univ. of Cal., S. F., Cal.—2 Passed, 0 Failed.—0% Failed.

Univ. of So. Cal., L. A., Cal.—7 Passed, 4 Failed.—36 4 11% Failed.

New Licentiates.

H. V. Brown, Mathew Campbell, John A. Clark, J. L. Cooke, Carroll C. Elliott, Wm. V. C. Francis, Sam'l A. Goldman, R. W. Harrod, F. P. Kenyon, Paul H. Lane, Geo. S. Loverin, Duncan D. McArthur, M. R. McBurney, M. Lee Martin, Chas. O. Mitchell, C. H. Montgomery, A. S. Musante, D. D. Nice, C. B. Palmer, Lee M. Ryan, L. L. Sexton, W. C. Smiley, Stephen H. Smith, S. E. Sweitzer, H. N. Taylor, Geo. H. Trevalyan, Harry W. Turner, Robt. G. Whitlock, Jas. L. Whitney, Lawrence Wing, W. A. Winship, A. H. Winter.

REGISTER CHANGES—

Those members who desire to keep their Registers corrected up to date should check this list carefully. In the following will be found all the official changes (in California) received from the 15th to the 15th.

Ardenyi, Joseph, from 973 McAllister to 1117 Turk st., San Francisco. **Arnold, J. Dennis,** from 1900 Webster st. to 2201 California st., San Francisco. **Armstrong, Maurice M.,** from Severance Bldg. to Lissner Bldg., Los Angeles. **Atkins, M. W.,** from 579 Seventeenth ave., San Francisco, to Burlingame, San Mateo Co.

Botsford, Mary E., from 1809 Broadway, to 807 Francisco st., San Francisco. **Bresee, Paul,** Conservative Life Bldg. to Lissner Bldg., Los Angeles.

Carolan, Herbert, from 1714 California st., to 2319 Buchanan st., San Francisco. **Chamberlin, H. H.,** from County Hospital to Coulter Bldg., Los Angeles. **Cheney, Wm. Fitch,** from 33 Spruce st., to Shreve Bldg., San Francisco. **Colliver, John A.,** from Bradbury Bldg. to Laughlin Bldg., Los Angeles. **Crees, Robt.,** from Paso Robles, San Luis Obispo Co., to Lakeport, Lake Co.

Ebright, Geo. E., from 2500 Fillmore st., to 2446 Washington st., San Francisco.

Fehleisen, Fred, from 902 Devisadero st., to 1211 Polk st., San Francisco. **Fitzgibbon, G. J.,** from 204 Haight st., to 1048 Larkin st., San Francisco.

Harms, F. W., from Galt, Sacramento Co., to First Nat. Bank Bldg., Berkeley.

Hannah, Jas. B., from Mill Valley, Marin Co., to 396 Guerrero st., San Francisco.

Kearney, J. F., from 237 Pierce st., to 3672 Twentieth st., San Francisco.

Miller, Austin, 1155 Broadway, Oakland, to Porterville, Tulare Co.

Murphy, Claire W., from Pacific Mutual Bldg., to Lissner Bldg., Los Angeles.

Scholtz, Waldeman, from 1223 Forty-seventh ave., San Francisco, to Susanville, Lassen Co. **Skeel, Donald N.,** from Douglas Bldg. to Grosse Bldg., Los Angeles. **Stone, W. J.,** from 1152 Kentucky st., San Francisco, to San Quentin, Marin Co.

Weber, Louis, from Sixth and Main sts., to Lissner Bldg., Los Angeles. **Worthington, Geo. B.,** from 2411 Pacific ave., San Francisco, to Marysville, Yuba Co.

Zelinsky, Frank, from Glendale to Auditorium Bldg., Los Angeles.

New Members.

Marin County—**Stone, W. J.**

San Francisco County—**Butler, Jos.; Cowden, A. F.; McGill, A. B.**

Santa Clara County—**Blair, Jas. C.,** 45 N. First st., San Jose; **Koeher, Jacob J.,** 15 S. First st., San Jose; **Tourtillott, W. W.,** Morgan Hill.

Sonoma County—**Clark, James W.; Temple, Jackson,** Santa Rosa.

Deaths.

French, James M., San Diego.
Zeile, Eugene, 1717 California st., San Francisco.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - 2210 Jackson Street,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone, West 5975.

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI FEB., 1908. No. 2

EDITORIAL NOTES.

STATE SOCIETY

Remember that the next meeting of the State Society is to be held at Coronado, April 21st, 22nd, and 23rd. On Monday, April 20th, the Public Health Association will have its meeting, and we understand that this will be particularly attractive. Do not fail to go to the Coronado meeting. There is no more beautiful spot on the Pacific Coast. The hotel is comfortable and the table of the best. Special rates have been made, including meals, of $3.00 per day for one in a room without bath; $5.00 for two in a room without bath; $1.00 per day additional for room with bath. The railroads will give the usual rates of one fare and a third for the round trip, on the receipt-certificate plan. The receipt-certificate must be obtained when the going ticket is purchased and must be signed by the secretary at the meeting; the full fare is paid going, and one-third fare on the return ticket. The program will be unusually good and will be so arranged that all may attend every session, and also have an opportunity to enjoy some of the many beauties of the ideal spot. It is especially important that every secretary of our county societies should attend this meeting. Do not fail to be there.

IS IT TO LAUGH?

From the *Osteopath,* a journal published in the interest of that sect, in Los Angeles, we qoute the following:

> "The *Western Osteopath* for October, edited by Dr. W. W. Vanderburgh, publishes in full the last questions of the State Board of Medical Examiners of California. They are fair and reasonable questions, in which any well-educated graduate of Osteopathy should make a good showing. Dr. Dain L. Tasker, of the Board, was assigned and conducted the examination in Anatomy. Dr. Ernest C. Sisson conducted the examination in Chemistry; both with conspicuous fairness and ability."

Now just please, please, bear in mind that *"They are fair and reasonable questions, in which any well-educated graduate of Osteopathy should make a good showing,"* and then let your mind go back over the almost unending "kicks" which have come from candidates who could not pass, and *from regular schools!* Is it to laugh or is to weep and tearfully talk learnedly about total depravity?

INTERNAL MEDICINE.

Confronted with the fact that there are a good many very excellent papers written on subjects related to internal medicine, but which, either because they are too long or because they are too technical, or for some other reason are not well suited for publication in a general medical journal, such as the *Journal of the A. M. A.,* that Association has established a new periodical entitled *Archives of Internal Medicine.* The first number was issued in January. There are to be two volumes yearly, each of some 600 pages, and the subscription price is $4.00 a year. The establishment of this new publication would seem to be a very wise move on the part of the Association, for it can thus present to those who are interested in the subject of internal medicine much matter that could not well be published in the *Journal A. M. A.,* already grown to a very large size. Furthermore, the Association is an organization of physicians for the benefit of physicians, and there is no good reason to be urged why the Association should not do everything in its power to aid its members and the physicians of the country generally. Our profession is supporting and making rich a good many private individuals and laymen through its productions. Why should we continue to do this when we may ourselves produce this material and issue it from our own printing establishment, giving to the physician the excess profit in the shape of a better publication at a less price? If the first number is a sample of what is to come, and we have no doubt of this, the *Archives of Internal Medicine* will be a most welcome addition to the medical literature of the United States; and, thank God; it is not full of nostrum advertisements! The editorial board governing

the *Archives* consists of Drs. Joseph L. Miller, Richard C. Cabot, David Edsall, George Dock, Theo. C. Janeway and W. S. Thayer. Checks, etc., should be made payable to the American Medical Association, 103 Dearborn avenue, Chicago.

THE PLAGUE SITUATION.

On December 28th, a meeting of the Council of the State Society was called for the purpose of considering the presence of plague in California and whether or not the State Society could do anything to aid in the fight against it. After a full discussion, the Council authorized the President, Dr. George H. Evans, to appoint a special committee of five to aid the local society and to endeavor to secure the co-operation of the various civic and commercial bodies, which up to that time had done nothing in the work of fighting the infection. This committee called a meeting in the hall of the California Club on the evening of January 18th and invited the directors of all the commercial organizations, Mayor, Supervisors, etc., to attend. At first sight of the audience, doubtless the committee were discouraged, for only some sixty persons seemed to be sufficiently interested to attend. But, fortunately, there were quite a number of the Merchants' Association present, and the facts expounded before them at once aroused their deep interest. They arranged for and called a meeting of business men on January 28th, on the floor of the Merchants' Exchange, and some six hundred men attended. Existing facts were explained by Dr. Rupert Blue of the Public Health and Marine Hospital Service, and others interested in the work, and both the Governor and the Mayor spoke in no uncertain terms of the dangers of the present situation and from the ignorance and apathy of the people. The necessity for the co-operation of the press was urged and resolutions to that effect were passed. These, coming from the merchants, who support the papers, had a very salutary effect and at last a modicum of publicity has been secured; even the poor *Examiner* stopped speaking in vague phrase of the presence of "contagion" in the city; it hated the word plague. At this meeting a committee of twenty-five, thirteen laymen and twelve physicians, was appointed by the Mayor to co-operate in the work and to stimulate public interest, etc. Up to the end of January, there has been no case of human plague in San Francisco for about a month, though the percentage of infected rats has risen steadily until it is over one and one-half per cent. This seems small until one remembers that even in severe epidemics the percentage of infected rats does not exceed six or seven per cent of those examined, and has been as low as two per cent. The Public Health and Marine Hospital Service laboratory is being enlarged and will soon be in a position to examine all rats obtained. Fleas are very scarce in the city, owing to the cold and rainy weather, and that accounts for the falling off of cases of human plague. With the return of warm weather—and fleas—we may expect to see an increase in the number of human cases.

ABOUT JOURNALS.

In almost every state in the Union one or more publications, claiming to be published in the interests of the medical profession, are issued at regular intervals; they are classed as "medical" periodicals and are supposed to represent the interests of medical men. With the exception of the *Journal of the A. M. A.*, the various state association journals, and a few issued by county societies, all are published primarily for profit and are owned either by publishing houses, pharmaceutical manufacturers, or private physicians. In some instances the smaller journals are really published at a financial loss, but this is made up to the owner by the books which he receives for review and which naturally are favorably commented upon in his journal. One could very easily designate scores of journals of this class in which no "book review" giving an unfavorable opinion of a book, no matter how bad a work it may really be, has ever appeared. When periodicals are profitable, the profit comes not from the subscriptions but from the advertisements. Anything that is calculated to reduce the quantity of advertisements in such a publication may naturally be assumed to be objectionable to the proprietor, for he dislikes to have his income reduced. This is almost too simple to need the saying. When the Council on Pharmacy and Chemistry of the A. M. A. was organized, probably 75 per cent of the advertisements in "medical" journals were of articles which had gained recognition by medical men on account of the mystery by which they had been surrounded by the skillful writer of the advertising matter relating to them. A few examples will suffice to illustrate this point. "Anasarcine" was written up as a *cure for dropsy*, though the things which composed it and which permitted it to *cure* dropsy, were carefully concealed from the physician. "Germiletum" was solemnly declared to be "a *specific* for catarrh," though how or why, we are not informed. Some things—notably the Lawrence line of nostrums—were, to accept the statements of the manufacturer, and these were the only statements available, capable of curing almost anything in a mysterious but most reliable manner. There were numerous mixtures of acetanilid, under fanciful names, such as antikamnia, phenalgine, sal-codeia, etc., which were said to be—by the manufacturers—*new* and most potently valuable chemical substances with merits only limited by the imagination of the "adsmith" or the extent of lie for which the manufacturer's conscience would stand. The investigations of the Council rent the veil of mystery and disclosed the fraudulent claims for composition or therapeutic marvelousness.

AND OTHER JOURNALS.

The *Journal of the A. M. A.*, and some of the state association journals, published these disclosures and resented the fact that they had been imposed upon and lied to; also, they refused to advertise the frauds, even though the money was "good" and promptly forthcoming. With

scarcely an exception, the privately owned and published-for-profit journals published venomous attacks upon the Association, its Council, its *Journal,* the state journals and medical organization in general. The storm raged most fiercely, and still rages, though somewhat abated. It was almost with fear and trembling that those who were interested in the cleaning-up movement asked themselves what would be the result of these attacks, for the combined circulation of all these proprietary journals must be very great. And what has been the result? Medical organization has progressed more rapidly in the last six years than ever before in the history of the United States. State association after state association has established its journal, and these, slowly but surely, are coming to the decision that they will not continue the frauds or participate in the graft derived from them, by publishing nostrum advertisements. This condition of things is most encouraging, for it shows that the mass of physicians are not fooled nor misled by the riotous language of the published-for-profit journals. Doctors are a part of "the people" and you know "You can't fool all the people all the time." Patricularly when, week after week and month after month, the true facts, without fear and without prejudice, are printed in those journals owned by our own societies and associations and really published in the interests of the medical profession—and not for the individual profit of the editor and owner.

INDIANA JOURNAL.

The latest recruit in the ranks of medical journals published by and for the medical profession, is the *Journal of the Indiana State Medical Association,* the first number being that for January, 1908. To say that it is a fine tribute to the Association which it represents is merely to give no more than due credit to the able editor, Dr. Albert E. Bulson, Jr., Fort Wayne, who for many years edited the *Fort Wayne Medical Journal Magazine* with credit to himself and his publication. But Dr. Bulson, with rather unusual broadmindedness, has recognized that the proprietary journal can not serve the best interests of the medical profession so well as the publication of and for the organization representing the whole of the profession, and he has therefore discontinued the *Fort Wayne Medical Journal Magazine,* or rather, merged it with the *Indiana State Journal.* That this newest of state journals will be welcomed by the physicians of Indiana, we have no doubt; that it will greatly aid in perfecting and maintaining the organization of the medical profession in that state, is a foregone conclusion; that it will keep the place in the first rank of medical journals to which it is entitled by this initial number, may be safely believed. And not the least pleasant thing to note in regard to the newly born journal, is the statement that it will advertise no preparations other than those of the Pharmacopeia, the National Formulary, or such as have been approved by the Council on Pharmacy and Chemistry of the A. M. A. Some state journals—notably New York—still maintain that they will not accept the ruling of the Council alone, but will be guided by individual judgment. "Individual judgment" is not worth a rap when one is dealing with a bunch of liars, and of all liars the nostrum man is king. He can tell more lies, of more kinds, in more ways, with more semblance of truth, in a more sanguine and apparently truthful way, with more persistency, more deliberately and with greater profit—to himself—than any cuss that has yet been discovered. It takes time, patience and much money to disclose these lies, and all these things are being spent by the Council—but *not* by any state medical organization or its publication. As a natural result, we find that the profession in the great state of New York is having foisted upon it, through the pages of its own journal, some nostrums for the presence of which the physicians of Indiana will not have to blush with shame.

WHY NOT?

Why not make an effort to secure the membership in your county society of every reputable practitioner in the county, before the end of the present year? The annual reports are now coming in to the secretary of the State Society, and they show great contrasts. In some sections practically every physician has been enrolled; in one or two instances the local secretary has written to the effect that "we now have all but two physicians in the county within the society, and I think these two will join in another month or so." That is encouraging and quite as it should be. In every such instance it is a very easy matter to show that the secretary is a wide-awake man, taking a deep interest in his society work, and devoting, unselfishly, a good deal of his time to seeing that the work is done and that every physician in the country is invited and urged to affiliate with his fellows in the uplifting of the profession and the increased usefulness of the medical fraternity to the public. A little effort, a little work, a little personal sacrifice may be, will accomplish wonders. A good many men do not feel like applying for membership in any organization, medical or otherwise, unless they are invited to do so. Be sure that they are all invited, not once only, but many times. Others may think that some member may "have it in for them" and thus keep them out of the society. Assure them that such is not the case, and see to it that no small personal spite is allowed to enter into the question of the eligibility of any physician for membership in a county society. Next January the legislature will, unfortunately, once more be legislating and what that body will do when it gets together, only the good Lord he knows! By that time we should have greatly increased our numbers and our solidity. By that time every county society should have, through its special committee, interviewed every candidate for the legislature and have made him conversant with the fact that the county medical society is the body to advise him properly as to how he should regard every proposed act of public health legislation. We can not

expect laymen to understand these subjects or to act properly upon them if we, who alone possess the technical knowledge, do not instruct them. Therefore, get very busy; see to it that every physician in your county who is reputably practicing medicine, is invited to become a member of your society, and does so.

THE PERMANENT ERADICATION OF THE PLAGUE.*

By W. A. BRIGGS, M. D., Sacramento.

Whether viewed from its economic or from its sanitary aspect, the plague is one of the world's great problems. And now that this grim specter of the orient, reminiscent of some of the darkest pages of human history, again stalks, lowering, in our midst, it is particularly meet that the California Northern District Medical Society should once more come to the aid of sanitary authority in molding and energizing public—nay, even medical—opinion. For it was this Society, I believe, which, in the former invasion of this pest, first of all the medical societies of the state rallied to the support of Dr. Kinyoun and, in unmistakable terms, declared its profound conviction that plague did then exist in the City of San Francisco—a verdict that time could not reverse even at the behest of "powers that be."

Our so-called "Island Possessions" and our increasing commerce and intercourse with oriental races invest the plague with increasing importance to the Pacific Coast and hence to the Western Hemisphere.

Primarily a disease of rodents among which it often spreads far and wide before being recognized in the human family; partly subterranean, partly aerial, partly unknown in its means of transmission; remarkable in the vitality of its bacilli and their power of penetrating the intact epidermis; frightful in its mortality, the plague presents to the sanitarian a problem, even when attacked with vigor and intelligence, formidable in its obscurity and proportions and, when neglected, appalling in its possibilities. May we not say then, that the bacillus pestis, that microscopic arch-enemy of the human race, is a foeman worthy of our best steel?

No apology, therefore, would seem necessary for bringing this subject again to your attention. To those of you, however, who had the privilege of listening to Dr. Powell's excellent paper on the historic aspects of the plague, covering the same field so soon again might well appear supererogatory if not presumptuous. As better suited to the occasion, therefore, and to my own purpose also, I desire to consider briefly the means necessary to its permanent eradication. For not only is this subject of vast intrinsic importance but, that an enlightened or even a civilized people should long tolerate repeated invasion or constant menace by so formidable an enemy to its economic, no less than its sanitary welfare, is quite unthinkable.

The rodents which haunt the habitations of man by the intermediation of fleas that infest them, are the chief carriers of the plague. Other rodents, however, are subject to this disease and perhaps occasionally communicate it to the domiciliary rodents and more rarely to man himself.

The "harmless necessary cat" and "man's chief friend," the far too common house-dog, are not unlikely carriers of the disease. After killing and devouring rats, they would certainly harbor the fleas as well as the bacilli of their victims and might easily communicate either or both to human beings to whom they so often come into intimate relation. Fancy one of them taking its accustomed nap on your bed, or complacently lapping your cheek after so delectable a meal! This possibility, it would seem, has not been taken sufficiently into account.

Fleas, flies, mosquitoes, bedbugs, body lice, ants and less frequently other insects and vermin, disseminate and may even inoculate plague bacilli. Fleas, flies and mosquitoes particularly may transport them considerable distances and infect either persons or foods. Fomites and infected foods including the various grains, communicate them to rodents and insects and directly to human beings also.

Man without being himself infected, may be the carrier of plague as has been illustrated, I believe, in the present epidemic in San Francisco. This he might do either by carrying fomites, infected insects or infected vermin.

Finally plague is communicated directly from man to man especially in the extremely fatal and highly infectious pulmonary form of the disease.

Its permanent eradication then, as may be readily inferred, presents several difficult problems:

1. To prevent the establishment of new foci.
2. To eradicate existing foci.
3. To prevent its reintroduction.
4. To exterminate its common carriers.

Although capable of brief statement this program, even when applied to a limited territory like that of San Francisco, is prolix beyond comparison. Should the plague once obtain an extensive foothold on this continent the difficulties of its extermination would be enormously increased, perhaps they would become insuperable. Hence, first among the problems that confront us I have placed that of preventing the establishment of new foci. The effective solution of this problem will require the intelligent and conscientious co-operation of national, state and local authorities which, in the present instance obtains in a very high degree.

But while the theoretical division of the task before us into its constituent problems may afford us a bird's-eye view it does not easily lend itself to practical discussion for the reason that, in a very large degree these problems overlap each other. To avoid the repetition incident to a discussion from this standpoint, I shall adopt a less methodical course.

First among the means of eradication would seem to be the establishment of a National Department of Public Health with a cabinet officer at its head endowed with proper authority in questions of mari-

*Read before California Northern District Medical Society, November 13, 1907.

time, international and colonial quarantine and in full charge of our national boundaries. The plague is never a purely local question. The very moment it obtains a foothold in any country it becmes a national question of the first magnitude. That this is the general opinion tacitly assumed if not distinctly formulated, is evidenced by the fact that in both invasions of the disease the national government has assumed control with the cordial approval of the local, as well as of the state authorities. Not only is the plague a matter of national import, but, for several reasons, it can be more effectively dealt with by national than by local authority. The national government can better effect international regulations and arrangements to prevent its dissemination; can better obtain information regarding its prevalence in our dependencies as well as in foreign countries and can better furnish trained men for the control of outbreaks either local or general.

It can better command the means necessary for these purposes. The expense of permanent eradication of the plague will be enormous and can not well be borne in its entirety by the communities in which this pestilence is likely to prevail. Rat-proofing waterfronts and adjacent buildings will be of itself a serious burden to any seaport and, added to other measures necessary to prevention and suppression of plague, would constitute a burden oftentimes beyond the capacity of single communities. Just now San Francisco faces a condition of this kind. In her impoverished state, she is defending not only herself but also the state, the nation, yes, the continent even, against a common enemy, and when the present epidemic is suppressed the warfare will only have begun. Our Pacific seaports are in equity entitled to aid and they need it. Finally, the national government would be free from those blighting local influences, commercial and political, which, once at least, have imperiled us at home and discredited us abroad.

All of these things the national government can do with less expense than could the individual states. I should be among the first to resent the intrusion of the general government into purely local affairs, but the plague, as I have already remarked, with many other epidemic diseases for that matter, is not a local question. It has never been and never will be.

By pronouncing the rat persona non grata, by fines, restrictions and quarantine of rat-infected ships, inventive genius could be stimulated to the production of a rat-proof ship or at least a ship that could be kept rat free. Sufficient demand will produce even a rat-proof ship.

Infected ships should be kept rigorously quarantined and should be refused discharge of their cargo except after the most thorough disinfection.

Ships plying from infected ports should be kept free from rats and if infested with them, should be held in quarantine until it has been positively demonstrated that both rats and passengers are free from infection.

Vessels plying from infected ports into the interior should be subject to regulations similar to those of sea-going vessels.

Rats should be prevented from landing from vessels.

Landings, docks, wharves, pier houses and the waterfront as may be, should be made rat-proof and should be provided with accessible boxes or traps where rats would naturally take refuge and could easily be destroyed. Ferrets if found immune to plague might be quartered along the wharves.

All buildings of whatever kind for a mile or more back from the waterfront should be made rat-proof and be kept rat-free. Warehouses, grain elevators and other storehouses where rats might easily obtain food and shelter and thus have more time and energy for reproduction, should receive especial attention. It would seem that ferrets would be particularly useful here.

In rat-proofing both wharves and buildings cement would probably be the best material but, except when constituting practically the entire material of the building as in fire-proof construction, would have to be supplemented by other materials and special devices.

Sewers should be made rat-proof or when this is impracticable should be kept rat-free by cementing places where rats might breed or take refuge and by frequent and generous flushing to drown them and to remove their food. Sewers should be studied and watched with the greatest care for they may well be lines of least resistance for rats when they are vigorously pursued in their usual haunts.

Garbage receptacles should be of metal, securely covered and frequently emptied.

The domiciliary rodents and all other plague susceptible animals near the water front and as far back as possible should be relentlessly exterminated. This is a difficult task, for the rat in the language of the street urchin may be termed "a wise guy." But in a continued contest of wits between him and the Lord of Creation the result should not be in doubt.

In dealing with rats as with most other problems with which physicians have to do, the most important thing in the long run is prophylaxis. Prevent rats and you prevent the plague. "No rats, no plague." The means of prevention are first, rat-proofing ships, waterfronts, sewers, and buildings; removing or destroying their foods; destroying their places of breeding.

Destruction of rats may be accomplished in various ways—by starvation, trapping, infection, poisonous foods and gases, by cats, dogs, ferrets, etc. The most practical and effective means in confined spaces, like ship-holds, cellars, rooms, etc, is by poisonous gases—carbonic acid, sulphurous acid, carbon bisulphide and formalin.

When rats are hungry foods poisoned with arsenic, strychnin, phosphorus, ground glass, etc., are effective.

The plague often appears first among rats. Frequest examination of these rodents, therefore, should be made in ports or other places exposed to infection in order to anticipate or even prevent, if possible, an outbreak among the people themselves.

A relentless warfare of extermination should be waged against fleas, flies, ants, bedbugs, mosquitoes, cockroaches and other insects and vermin—and here also largely by prevention, by destroying their breeding places.

Fruits, vegetables, meats and other foods so often exposed in our markets should be effectively screened against rats, mice, flies and other insects and as far as possible, protected against other sources of contamination.

Cases of plague should be rigorously quarantined. Attendants, particularly on pulmonary cases, should be immunized. Those exposed in infected premises should be freed from fleas and vermin, disinfected, immunized and placed in a detention hospital until the incubation period is well passed.

Infected premises should be strictly quarantined, freed from rodents, insects and vermin and thoroughly disinfected before being reoccupied. On no account should rodents, insects or vermin be permitted to escape from such premises. Premises very difficult to disinfect or to free from pests should be unoccupied under quarantine for a long period and given repeated fumigations or should be burned —preferably the latter.

Rat disinfection of waterfronts including wharves, landings, docks, pier houses and contiguous districts and of shipping of all kinds, should be prosecuted implacably until both waterfront and shipping are made absolutely rat-free, thus preventing infection of new ports or reinfection of the original one. Freight stations, warehouses, grain elevators and freight cars, which I believe not infrequently transport rats to the interior or even from one part of the city to another, should be kept under sleepless scrutiny.

Foci of infection should be treated partly on the principle of "back firing"; that is, rodents should be absolutely exterminated, beginning several blocks outside of the focus and closing in from the circumference, thus exhausting the plague material in a wide belt beyond the focus while the focus itself is attacked from within. This method would, in a measure prevent the scattering of rodents outward to form new foci or to extend the old.

Since plague bacilli possess marked resistance under a great range of conditions a rat-disinfested territory is by no means necessarily plague disinfected. Infection may remain latent in the dead bodies of rats, flies, fleas and other vermin and insects long after the utter extinction of these plague-carriers, and blaze up anew in their reappearance. We see in this and in the reimportation of plague from the orient the imperative necessity of rat-proofing. This necessity is economic as well as sanitary. The expense and the loss incurred by San Francisco on account of the plague if properly expended in rat-proofing would soon make her practically impregnable to that disease.

Finally, as practical men, we can not ignore the political aspect of this question. In a democracy such as ours no great work can be accomplished unless deeply rooted in public consciousness. A large amount of money will be required for the permanent eradication of the plague. This may be expended by sanitarians but it must be derived from the people. The people, therefore, must be informed, stimulated, aroused, until their latent energies become dynamic. Only publicity can do this. Medical men should enter on a campaign of education individually, through their medical societies, their medical journals and through the public press. The more the people know of the plague the more generous will be their response to sanitary needs for its eradication.

Recapitulation.

The permanent eradication of plague may best be accomplished by:

1. The establishment of a National Bureau of Public Health with a cabinet officer at its head in full sanitary control of our sea-coast and our national boundaries.

2. The absolute extermination of rodents in territory either infected with plague or exposed to such infection.

3. The extermination of fleas, flies, mosquitoes and other insects and vermin that either directly or indirectly disseminate the plague.

4. Rat-proofing (a) all shipping, both domestic and foreign, plying from infected ports; (b) all waterfronts of sea-ports exposed to infection and of interior points in communication by water therewith; (c) all buildings adjacent to waterfronts and as far back as future experience shall prove expedient; (d) all warehouses, freight sheds, storehouses and grain elevators, stables and granaries; (e) all establishments storing or furnishing foods or food supplies; (f) all hotels, lodging houses, boarding houses, restaurants, saloons, theaters and all other places of business, pleasure, resort, assembly or public use of whatsoever kind; (g) all buildings of whatever kind in process of erection or that may be hereafter erected in all cities, towns or districts suffering or threatened with plague infection; (h) all sewer systems of such cities and towns in their entirety.

5. Frequent examination of rats in ports and districts exposed to infection.

6. Preventing the escape of rodents, insects, and vermin from infected premises.

7. Killing cats, dogs, rabbits, guinea-pigs and other domestic or quasi-domestic animals that may have been exposed to plague infection—by catching plague-infected rats for instance.

8. Quarantining (a) all cases of plague, all plague suspects and all persons exposed to plague; (b) all infected shipping; (c) all rat-infested shipping plying from infected ports; (d) all plague infected premises; (e) all infected cities, towns and districts not diligently prosecuting the eradication of plague.

9. Immunizing (a) all nurses, physicians and other attendants on cases of plague; (b) all inspectors and others directly engaged in the work of plague eradication; (c) all of those otherwise exposed to plague infection.

10. Skilled official inspection of all bodies of the dead before embalming or interment in all cities, towns or districts infected or threatened with plague.

11. Destruction or positive disinfection of all fomites.

12. Burning all infected structures not amenable to disinfection.

13. The passage and enforcement of ordinances to facilitate the work of health boards as follows:

(a) Requiring property owners under severe penalties to free their premises from rats and other plague-carrying rodents and from conditions which permit or promote their propagation and to remove the conditions favorable to the multiplication of flies, fleas, mosquitoes and other insects that may, either directly or indirectly, disseminate the plague.

(b) Prohibiting under severe penalties the discharge of cargo or any part thereof from rat-infested ships except after disinfestation and certification in writing by the proper authority.

(c) Prohibiting the approach of such ships sufficiently near to wharves and landings to permit the escape of rats to such wharves or landings.

(d) Quarantining rat-infested warehouses, groceries, both wholesale and retail, and other rat-infested business houses dealing in foods and food supplies.

(e) Requiring property owners to rat-proof their premises within a reasonable and specified time beginning at the waterfront and extending backward.

(f) Requiring monthly examinations by experts of rats caught in such cities, towns or districts.

(g) Providing for effective rat-proofing of landings, docks, wharves, pier houses and sewers.

(h) Requiring official inspection and certification before interment of the dead.

(i) Requiring dealers in foods and food supplies to protect such foods and supplies from rats, mice, flies and other insects and vermin and all other sources of plague contamination.

(j) Requiring hotels, lodging houses, boarding houses, restaurants, saloons, theaters and all other places of business, pleasure, resort, assembly or public use of any kind whatever to be kept absolutely free from domiciliary rodents under penalty of a severe fine and closure until thorough disinfestation has been done and attested by an authorized officer of the Board of Health.

(k) Making rat-infestation prima facia evidence of plague-infection in ships plying from plague ports.

(l) Appointing inspectors in sufficient number to enforce such ordinances.

MEDICAL EXPERT TESTIMONY.

Presidential Address, Santa Clara County Medical Society, December 18, 1907.

By ANTRIM EDGAR OSBORNE, M. D., Ph. D.

At the time that this society devoted a session to the consideration of the question of Medical Expert Testimony, I made certain suggestions for a radical cure of the evils that now exist and have so prostituted the giving of testimony in Medical-Legal matters that the so-called expert witness is little less than an object of derision and his testimony the torn and ragged plaything of litigants and contestants. So interested did the Society seem, in discussing Dr. Lyon's excellent paper and the arguments and opinions it evoked, that we unanimously agreed, you will remember, to arrange a joint meeting in the near future with the Bar Association of this county and through mutual effort decide upon a mode of procedure more to the dignity of our profession, more to the satisfaction of our legal brethren, and more to the ends of justice, than can be said of the present miserable system.

Notwithstanding the meeting with the Bar Association has not been held, I trust such a meeting will soon be arranged for and that out of that conference may be evolved the first steps toward securing a rational and dignified presentation of expert testimony. The object of the present address is to give emphasis to what the speaker considers the more pernicious features of the present antiquated system and to present in a little stronger light the suggestions formerly made for reform.

Let us first see what is charged against the present system and then proceed to the examination of the evidence against it and the arguments offered for its modification if not entire abolishment.

The opposition comes from three distinct sources and the whole matter may be reviewed accordingly.

1st. *From the legal profession:* hear the arraignment. From no less an authority than Clark Bell, LL.D, the world-renowned jurist and author, comes the following denunciations:

"The salvation of the system of expert evidence, especially as relating to criminal cases where human life is in the balance, is at stake, and only legislative action can prevent its elimination from our criminal procedure. It is only by arousing public opinion to the exigencies of the situation that we can expect or even hope for any deliverance.

"The degradation to which it has sunk, especially in the Thaw trial, is one of the deplorable phases of the subject. It is well to look the question fairly in the face. The medical expert when he appears as the paid witness for either the state or the accused, is discredited by all, believed in by none!

"It is a blistering shame to the medical profession now that no important case of homicidal insanity is tried where the four or six witnesses on the one side are not met and balanced by a like number on the other.

"Judges do not at all consider the medical witness as an important factor and juries do not pretend to regard the testimony, or pay any heed to it, and they do not hesitate to so state, publicly, from their seats as jurymen. As the law now stands and as the evidence comes to the jury it is of no value whatever and the juries are perfectly justified in their refusal to even consider it.

"In the mind of the great public it is fast becoming to be universally accepted as a fact, that the paid medical expert swears for the side that engages and compensates him.

"It is incredible that the medical profession has fallen into such a horrible abyss as all this implies."

And again: "The fault is in the system itself and not in the profession of medicine. The law should

be so amended as to make such scandalous conflicts of opinion impossible, upon what the public and the juries consider as an identical question. All counsel know that medical men are not as a rule willing to swear to an opinion they do not entertain."

Among the many other prominent jurists that might be quoted as advocating immediate and sweeping reform, stands conspicuously, Chief Justice L. A. Emory of the Supreme Court of Maine, who is known as the father of the "Emory Act" proposed as a remedy at the last session of the Maine Legislature; Chancellor John R. Nicholson of the Supreme Bench of the State of Delaware; Judge Chas. G. Garrison of the Supreme Bench of New Jersey; Judge Amasa J. Cobb of the Supreme Court of Georgia and John W. Rowell, Chief Justice of the Supreme Court of Vermont. These named have consented to act as a committee to consider and formulate a comprehensive plan for relief.

2d. *From the Intelligent Laity.* Prof. Clarence A. Lightner in a letter to the Medico-Legal Journal of New York, commenting upon the agitation of the subject by that journal, says:

"I wish to say that intelligent discussion of the subject of expert testimony equals, if it does not exceed in importance, any matter that you have heretofore undertaken.

"Naturally the public at large has had its attention called mainly to medical expert testimony in connection with the more notorious criminal trials. Undoubtedly a remedy for the evils, which become manifest from the reports of those cases, is most desirable. I think the law and its principles of evidence, are to a considerable extent, responsible for the unsatisfactory results. However there can be no question but that our method of permitting each party to employ and to pay such experts as he desires is largely the cause of the unsatisfactory conditions surrounding expert testimony at the present day."

The Providence Tribune editorially says:

"With the light let in upon the confused and obscured mass of so-called expert testimony which distinguished to its discredit the malodorous Thaw mistrial and the recollection of the medical sharps in the almost equally offensive Molineaux case, the reading public is prepared to view with interest the efforts made to pass in the Maine Legislature a bill to provide medical experts for both criminal and civil cases. If the legislators of Maine should rise to the demands of progressive jurisprudence, and the good example set by them should be followed by lawmakers generally throughout the Union, there speedily would result that much-to-be-desired condition under which evidence honestly offered by recognized experts could not be rejected or made to serve a purpose subversive of its intention. The soundness of the assumption that 'there is no essential flaw in medical expert testimony' would be established in law. The common sense at the bottom of this matter is that no court or jury should be free to disregard 'facts presented scientifically by competent persons when the facts bear directly on the case at bar.' It may be hoped that the death knell of trick expert testimony has been sounded."

The Boston Advertiser commenting on the same matter treats it in like vein as the above and concludes that the proposed innovation "is reasonable and not to be disputed by fair-minded persons."

3rd. *From the Medical Profession.* The opposition from this source is perhaps the most vigorous. Medical men may be expected to show some warmth in treating the subject, inasmuch as they have most keenly felt its manifold injustice and they have also most frequently been the victim of its degarding influences. Dr. F. E. Daniel, editor of the *Texas Medical Journal,* says:

"The jurisprudence of insanity is far behind the present status of medical science; it belongs to a past age. From the standpoint of the medical jurist, the jurisprudence of insanity is defective in at least three particulars:

1st. The defendant in a murder trial has not the benefit of science because recent discoveries and conclusions of medical science are not comprehended in the existing system. The laws have not been made to conform thereto nor do the courts permit the text books, the standard authorities, to be quoted in support of alleged insanity.

"2nd. The law leaves to the determination of a jury, often of unenlightened men, metaphysical questions that baffle the ablest scientific minds, to wit, the existence or non-existence of insanity, the degree of impairment of free will and the extent of responsibility of a person adjudged insane by medical experts.

"3d. The Courts do not exercise proper discrimination in allowing men to pose as experts."

Dr. E. S. McKee in the St. Louis Medical Review presents this feature of the practice:

"It is generally impossible for attorneys to understand a medical situation and to comprehend the necessity of framing questions which are rational and calculated to bring out the point at issue. The attorneys answer they are afraid of bringing out too much, for fear that the opposition may profit and the expert is handicapped and the court and jury are so confused that they are glad to eliminate the expert testimony and decide for themselves.

"The expert is tolerated and frequently dismissed without honor."

Along much the same lines Dr. David M. Totman, in his presidential address to the Medical Association of Central New York declared that he had been advised by one of his friends, a most influential member of the bar, that there was neither honor, glory nor anything else to be got out of a medico-legal case but to get one's name smirched and dishonored. The conditions which surrounded the giving of expert testimony in our courts were well nigh intolerable, considering the attitude of the public press, the insulting inuendoes of graft and the charges of open perjury committed by medical men on the stand. He offered the following suggestions. Like Dr. Daniel, quoted above, who declared he would, if accused of a crime, rather trust his fate

to a toss up of a penny than to stand trial by a jury to whom is given the determination of questions so far beyond their comprehension, he saw no relief under the present jury system. It would take centuries of education and evolution for the average jury to understand much expert testimony, so no matter how perfect the expert evidence given the verdict would not be influenced one whit. Even the learned judges were not always able to appreciate the bearings of expert medical testimony. He held that hysteria for instance, was a subject of such a nature that neither judge or jury however learned, might be able to execute justice when such a subject was under consideration. No man could pass upon the value of expert testimony in its entirety unless he had 15 or 20 years of study, observation and management of hysteria.

Dr. Ralph L. Parsons has declared:

"The reasons urged for a change in the method of procedure in the adducing of evidence, are pertinent and weighty. When expert witnesses are presented by either the prosecution or the defense it may be taken for granted that the witness already has an opinion or a bias in favor of the side on which he has been called. Otherwise, presumably, he would not have been called by that party. Or, if not already biased, the fact that he has already been called by one of the parties, will be sufficient to cause a bias in favor of that party. Especially will this be the case, when, in addition to the friendly confidence involved in thus being called as a witness, the pecuniary consideration to be expected, is taken into account."

The two essential objections to the present system may be summed up as follows:

1st. The partisanship of experts, as it is viewed by the public generally. For decency's sake let us all assume in the beginning that medical men are actuated by high ideals and governed by a sense of independence and sterling faithfulness to principle. Let us assume that their opinions are the reflex of an unbiased mind, at least as a rule. As a matter of fact, a lifetime spent in contact with medical practitioners leads me to believe that they are less venal as a class and more to be relied upon as a rule, than any other class of individuals. It is also true that now and then we find a medical man made out of very common clay—one perhaps, who under the veneer of professionalism hides the accomplishments of a pervert, a shyster, a liar or a rogue. Police records show that when the medical man does go wrong he is a very dangerous person and studies in applied psychology reveal the deplorable fact that when the trained physician possesses the bar sinister of turpitude, he constitutes the most profound menace to society. This is easily understood, for reasons so patent they require no elucidation. But while the medical degree and accumulated medical honors can not make a man better, his calling can and does. From the psychological reasons associated with the influences leading a man to take up the study of medicine and the practice as a life work, it is equally easy to prove that inherently medical practitioners are as a rule, persons of a singular appreciation of honor and personal integrity. It follows therefore that those who sell themselves and color their opinions and testimony in accordance with the fee that is offered, are the exception to the rule. But alas, the public is not inclined to make these nor like fine distinctions, so that the honest medical witness has now come to be viewed in these degenerate days of graft, often by court and always by jury as the paid witness of his side, talking for a fee!

A book has been issued recently by a prominent medical author in which this sort of testifying has been termed, "Perjury by Purchase." Other writers have distinctly called such evidence, "a farce from any standpoint." You will see therefore that it is not a question of a man being paid for his services, (for it would be absurd for any one to suppose that one should, much less advocate that he be required, to serve without compensation) but it is a question of a man being paid by either side of the case on trial. It is impossible for a jury to understand how a man can be retained by a side without a consideration and advertisement, position or preferment being as much a remuneration as money, to their minds. And we must not blame the juryman if he associates bias with consideration. The point to be made is this: if the jury or the court or both are inclined to consider the attitude of the witness one of bias, his testimony will naturally be viewed by them as worthless and will be rejected by them in their final judgment. The witness stands discredited before them and the result is as disastrous as if he were known by them to be the rankest perjurer. So long as there can not be an important trial without experts being arrayed against one another, even when called to testify as to scientific facts, the public will continue to revel in low down criticism and to humorously speculate as to the price of each man by the number and prominence of the experts thus arrayed against each other. As a prominent New York lawyer puts it: "When medical experts can be found who will swear directly opposite to each other, it is time for legislation to arrest the evil."

2nd. *The Hypothetical Question.* The best thought of the nation agrees that this form of questioning an expert ought to be relegated to some museum for antiques. It has done more, probably, than any thing else, to bring about the conditions we deplore. The theory upon which the hypothetical question originally rested was that after certain facts had been established by the evidence of ordinary witnesses and admitted by the court, a resume of these salient features as the characteristics of a mythical person could be presented to the expert witness for his opinion thereon, it being assumed that if the individual in a certain cause has been proved to possesses such and such characteristics and to have committed such and such acts—all identical with the characteristics and acts of the mythical person of the hypothetical question, and which the learned expert shall declare as his opinion constitutes insane manifestations, then the real person on trial

may be considered insane and hence irresponsible, etc.

I have known trials where the hypothetical question played a most important part—where the attorneys for the defense secured a positive opinion from the experts for his side in his client's favor and where a little later the attorney for the prosecution was able to submit to the same experts another hypothetical question apparently involving the same points as the former but so cunningly framed that the experts were forced to give under the restrictions to which they were limited, an opinion equally favorable to the prosecution. Neither the attorneys nor the court permitted the witnesses to explain the technical differences in the questions, which forced them to give opposing answers, which to the minds of the uninformed jurymen, constituted flat contradictions. To the jury it was all Tweedledum and Tweedledee, but the doctors were asses—that was plain enough.

So much for the objections to the present system. Along what lines may we look for suitable reforms? Pardon me if I say that I have studied these matters from many viewpoints and while my opinions may not be conclusive, I feel that my experiences and the results of my study warrant me in making certain positive suggestions. I have attended upon court procedures and I have had an interesting experience with hypothetical questions. I have also experienced the grilling of cross-examination at the hands of the "gentlemen of the other side." During the past few years I have regularly and consistently refused to appear as an expert in any case where I'd be compelled to attend and testify as the retained witness of either the defense or the prosecution. I have done some expert work under the selective control of the court, however, and I am impressed with the fact that such work can be done most satisfactorily when the expert is named by the court and is given opportunity to render a full and unhampered professional opinion based upon ascertainable facts. Expert work of this sort is worth while. And this brings me to the suggested remedy: Experts to be selected by the court in all cases where needed, and named because of their special fitness; these experts to be compensated by order of the court as it may deem proper and the expense to be borne as a regular trial cost, and such witnesses to be permitted to testify or report their findings and conclusive judgments after full opportunity to investigate all the medical or other scientific facts presented by the case. To my mind the matter of deciding if there shall be one or three experts and also who they shall be, can be most safely left to the judgment of the court. In many cases one expert would be sufficient, though for reasons of public policy it were better to name more than one. In intricate cases three or five could be selected so that the conclusions of the greater number might prevail, after the decisions of our own Supreme Bench. I would have these experts so selected examine every necessary bit of evidence and consider every possible feature of the case, for or against, and I would have them supplied with every facility in the making of thorough investigations. Of impartial selection, of known fitness, of unquestioned professional integrity and possessing public confidence, such witnesses would be free from the suspicion of bias and their expressions for or against would be convincing. It has been argued that even were such a system established the rich would find a way to introduce their own hired experts anyhow and thus the newer method would be attacked. The criticism is its own most effective answer and refutation. Were such a system in vogue and were the rich rascals (for only rascals would fear the impartial expert) able to put on the stand ten dozen experts to defy the experts of the court, who would believe them? Their influence with the jury would be offset by the nature of their position; bias, suspicion and criticism would do the work for them and they'd have no weight whatever with either jury or court. Such a condition of affairs would soon work its own swift ruin. It would not have the confidence or support of the public, whereas the plan I suggest would.

To bring about the changes desired, certain legislative power seems to be necessary. Let me present the following concrete proposition: let a bill be presented to the next session of our State Legislature to read somewhat as follows:

An Act providing for the appointment of Expert Examiners, defining their duties and providing for their compensation:

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. In any case, civil or criminal, in any of the courts of this state, when it appears that questions may arise therein upon which expert or opinion evidence would be admissible, the court or judge thereof may appoint one or more disinterested persons to act as Expert Examiners, and he or they so appointed shall make such examination and study of the subject-matter of the questions involved as they shall deem necessary to a complete understanding thereof, and such further reasonable and pertinent examination as either party to the case shall request and the court approve. Reasonable notice shall be given each party of physical examination of persons, things and places and each party may be present at such examinations.

Section 2. At the trial of the case said experts shall present their findings and opinions to the court, either verbally or in writing as the court shall direct, together with such explanations as may offer a clearer understanding of the facts upon which the said findings and opinions are based, but the said experts shall not be permitted to take the stand as a witness for either party to the case at trial, nor shall it be proper to attack, by cross-examination or otherwise, the credibility of either the experts or their evidence, by either party at trial, nor in any other way discredit the court's own expert witnesses.

Section 4. For time in attending the trial or con-

sumed in complying with the orders of the court, and for the necessary expenses incurred in doing all things requisite to carry out the intent of this Act, each expert, as herein provided for, shall be allowed by the court such reasonable sum for time, services and expenses as the judge of the court shall determine and order, and all such sums shall be considered a regular charge upon the county treasury and paid thereout of as a part of the court expenses.

Section 4. When in the trial of any case in any of the courts of this state, questions arise upon which expert or opinion evidence is offered, the court may continue the case and appoint expert examiners for such work, as provided in Section 1 of this Act, and such persons so appointed shall be compensated in the same manner as herein provided for other expert examiners.

ACROMEGALY WITH FACIAL HEMI-HYPERTROPHY.

By V. C. THOMAS, M. D., San Francisco.

Acromegaly as a separate entity was first described and given the name in 1886 by Pierre Marie, and is sometimes called Marie's disease. The name was taken from the Greek, the literal translation of which means having large ends, Pierre Marie's conception of the disease being that this was its characteristic feature. Recent studies and research have disproved this point, yet, like many other misnomers, the name of acromegaly is still retained by common consent. Since Marie's original articles appeared there have been several cases of acromegaly, collected by one of his pupils, extending as far back as 1552, which appeared under the various names of gigantism, dwarf, etc. To the present time the completed histories of cases presumably acromegaly number a little over 221. Carl Von Langer in a study of gigantism in 1872 divided the same into two classes, one of which has since been found to be typical of acromegaly as described by Marie. No disease of such comparative rarity has attracted such universal attention of the most able and eminent men in the profession as acromegaly. Of the early papers those of Versaile, Dana and Hutchinson, and more recently the extensive studies of Tamburini and Sternberg which appeared in '97 and '98 are the most authentic and exhaustive. Benda, writing in the Deutsche Clinic, 1906, says it is becoming the general opinion of anthropologists and of those having made a study of the disease, that all giants and all dwarfs of which there is any record, were probably cases of acromegaly. He also believes, or at least suggests, that the large skeletons of prehistoric men dating back to the time of Adam must be examples of this disease, because the average man of that age has been found to be much shorter than the average man of the present time, and, therefore, it is probably one of the oldest diseases known, though but recently recognized.

The case about to be described possesses several points of interest from a diagnostic point of view, and from the rarity of the complication. After a long and tiresome search through the extensive and voluminous literature on acromegaly, I find but one other case similar to this, which is described by a number of eminent men, both in this country and Europe, under various headings. The case seems to have been first described by Dana in 1893, while the patient was living. I saw the post-mortem of this same case ten years later at the Presbyterian Hospital, Chicago. As this case so closely resembles mine I should like to briefly note some of its main features. The case to which I have reference is that known as "The Giant Wilkins," first studied by Dana in '93, presented by Lamberg to the Medical Society of Vienna in 1896, studied by Sternberg, Buhl, Sirena, and several other Europeans; by Bevan, Pearsall, and Bassoe in Chicago, in 1903, who made the final report of the case. This giant Wilkins, seven years before death, was the fourth in height. Only three skeletons in museums are larger; Irish giant at Dublin (259 cm.); at St. Petersburg (254 cm.); and Patrick O'Byrne, London (249 cm.). Wilkins (245 cm.).

Sternberg in discussing this case groups it together with Bewel's and one of Sirena's as pathologic non-acromegally gigantism, the pathological feature of this group being tumor-like exostoses of the skull. In differentiation from Leontiasis he says, if the disease is extensive and associated with gigantism a confusion with acromegally is likely; this actually happened in the case of the giant Wilkins. Schmidt in his treatise on gigantism was positive that Wilkins' case was not one of acromegaly; yet post-mortem showed that it was.

The personal history, in brief is,

Admitted to service of Bevan at Presbyterian Hospital, June 28th, 1902. Wilkins, age 28. Family history negative so far as giants, tuberculosis or tumor. Weighed nine pounds at birth, was normal until four, when rapid growth began. Over six feet at ten years; at eighteen he was eight feet two inches tall. Usual diseases of childhood, lateral curvature of spine for about the last twelve years. At eight, notices small growth about left eye; this continued to grow until four or five years ago, since which time it seemed to be stationary until three months ago, since when it has increased rapidly. Saw Professor Virchow in Berlin, who, so he says, "pronounced the growth benign. It was on the external surface of the skull and would probably never cause him trouble." Three months ago he had severe pain in left frontal and temporal region each morning on rising; pain disappearing gradually at ten o'clock. For the past month he has required the constant use of opiates. One month ago he lost the vision in the left eye. Eye examination one year ago, normal; now has choked disc. Thinks it has been weak for several years. Three weeks later loss of vision in right eye, saw dimly on retiring; next morning could not appreciate light. He has had severe spells of vomiting during this time; these spells have not been closely connected with eating. No sensation over the left side of the face; for one month ringing sensations, pains accompanied by deafness in the left ear. Since his arrival at the hospital has been dull, almost semi-stupid. One week after loss of vision in right eye he died. Physical examination: Eight feet two inches tall, well proportioned. There is a growth on the left side of the head which extends from the median line outward and backward

to the external auditory meatus, and downward over the face to the alveolar process of the superior maxilla. Left eye closed, left upper lid thicker than right. Pupils do not re-act to light or convergence. Left eye is immobile. Tongue does not deviate on protrusion. Muscles on both sides active. Left side of face and tongue devoid of sensation. Urine examination, Sp. Gr. 1027, acid; no albumin, sugar, or casts. Blood examination: Hmg. 85% red blood corpuseles 4876000 Pml. 9,300 Opth. Examination showed a bilateral choked disc. P. M. held immediately after death by Prof. Heltoen, assisted by Dr. Loeb and Bassoe. Anatomic diagnosis. Necrotic and ulcerative colitis, cirrhosis of liver; chronic catarrhal gastritis; epitheliosis of esophagus; hemorrhagic broncho-pneumonia; enlargement of thyroid; sarcoma in region of hypophysis; extension of tumor to subcutaneous tissues; diffuse hyperostosis of frontal, left parietal, left temporal and left superior maxillary bones; calcification of left pleura and spinal arachnoid, compression of brain; general gigantism.

The base of the skull is greatly deformed, on the left side the anterior fossa is obliterated by the thickened frontal bone and the middle fossa is almost filled with bone. The sella turcica is wide, its floor partly eroded. In this region is a large tumor mass, which has grown into the pharynx, orbits, and ethmoidal sinuses, and has destroyed the roof of the nose. The roof of the left orbit has been much more extensively invaded then the right. At the base of the skull in the median line, after removing the brain, is a pediele, darker than the tumor mass. This is found to be the infundibulum, and measures 3 mm. in diameter and is inserted into a round elevation 13 by 6 mm. of the same color as the stalk. The tumor itself is white on the surface, lobulated, the lobules 2 to 4 mm. wide. On section the superficial part of the tumor is white, a gelatinous fluid exudes from the cut surface. The portion of the tumor removed with the phypophysis weighs 150 gm., total weight of brain 1,540 gm.

Micro. examination of serial sagittal sections were made of the tumor, which was designated an osteoplastic sarcoma with edema and mucoid degeneration. The hypophysis and its relation to the tumor, a fibrous membrane (duramater) was found separating the hypophysis from the tumor. There were no transitional cell forms. Some enlargement of the hypophysis is present; is flattened from before backwards in all sections by the pressure of the tumor. The histologic structure is essentially normal, though there are many and abundant engorged vessels, numerous hemorrhages, a few foci consisting of densely packed, small, round, deeply stained mononuclear cells, an occasional amyloid body, and in places, the large eosinophilic, and epithelial cells are vacuolated.

"Bassoe" designates the case as one of gigantism with facial hemi-hypertrophy and leontiasis ossea. "Journal of Nervous and Mental Disease. September, 1903."

The history of the case which I now report is as follows: Father, 55, born in Ireland, good health, no tuberculosis, tumor, Bright's disease, or giants in the family. All, however, were tall. The shortest was 5 feet 7 inches, the tallest 6 feet 1 inch. Mother, age 52, height 4 feet 10 inches, weight about 125 pounds. All the immediate relatives were short. Mother's father died of typhoid at the age of 62. Mother's mother, cause of death unknown, at the age of 71. Most of the other relatives lived longer—in fact, it was a long lived family. No history of tumor, kidney trouble, tubercuIosis or insanity in the family. Patient is one of nine children. One child died of cholera infantum at the age of 18 months. All the other children in good health, none as tall as the father, except this patient.

On March 1, 1907, I was called to examine this patient relative to his sanity. Age 22, born in San Francisco. By occupation ornamental tile-setter. Had the ordinary diseases of childhood with perfect recovery. At seven fell a distance of about 14 feet, striking on the face and chest and breaking out four upper teeth. Did not lose consciousness. No other apparent injury was found or complained of at the time. No other injury to the head of any kind is known to have occurred since then. At nine years had summer complaint, was delicate for a time, recovery seemed perfect. Was about same as other boys at this age. Completed the grammar grade at 15 years. At 16 began to learn the trade of tile-setter, at which he showed marked ability, learning in three years what ordinarily required four. Up to 16 years of age he was neat in dress, of good habits, amiable disposition, but at this time began to grow rapidly. Parents also noticed that he required a great deal of sleep. He was hard to awaken in the mornings, and often late to work. Was not energetic nor ambitious, or put forth much effort to advance himself in his trade. Had few associates; has read a great deal of cheap literature, dime novels, etc.

At 19 he was 6 feet 1 inch tall and in apparent good health. Had up to this time made no complaints whatever of pains or aches of any kind. At this time it was noticed by parents that he began to sweat nights, increased appetite, more time required for sleep. The sweats increased gradually till the sheets and underclothing were saturated nightly. About six months after appearance of night sweats he was helping carry a gas mantel weighing about 60 pounds and walked backwards. He stepped down a distance of about six inches when a sharp pain was felt in the lower part of his back, but did not quit work. Continued work about one week after this time, then stopped because he thought the work was too hard for him, and has done no work of any kind since. Did not see a doctor at the time of the accident and had no other complaint than the pain just mentioned. He has remained home ever since this time, does not go out of the house, sleeps a great deal, has an excessive appetite, and profuse night sweats. He denies having headaches, dizziness or trouble of any kind with his eyes. From the parents, however, I learned he has often complained of occipital headaches, backaches and trouble with his hip, but he would not admit this to any of the physicians called in to see him nor to myself, because of a fear that he would be given medicine or be taken to a hospital and operated upon against his will. Since the accident he has complained of an excessive languor and indisposition or inability to work, due to the weakness and tired feeling in the back. While walking he has no pain or tired feeling but when sitting down it seems to come over him, making him feel that the effort to get up is too great a tax on his strength. The change in the speech seems not to be noticed by the patient at all, but the parents state that this came on gradually, making its appearance about one year ago; also at this time parents noticed that the feet required increasing sizes of shoes; the head a larger hat, and that he began to grow taller, becoming less active and sluggish in gait. There has been a gradual change in temperament, most noticeable in the last year. Patient is sometimes melancholy and broods over his supposed accident. Is continually finding fault and taking exceptions to the actions of his two sisters, particularly to their demeanor toward their male friends, often accusing them of impure motives and of attempts to make secret appointments. At first this was not noticed, much because he did not insist on it; of late it has been

apparently uppermost in his mind, so that he has quarreled over this and similar topics with them almost constantly. He sits in the kitchen for hours at a time saying nothing, doing nothing, but watching every movement of whoever may be there at the time. Seems timid of the dark and will not sleep in a room unless a light is kept burning, due to a fear he entertains for his personal safety. He reads the daily papers a great deal. Seems to possess fair reasoning powers in most things, has a fair memory, but his speech is slow and difficult, the lingual sounds being particularly hard to make. He seems perfectly content with his surroundings. He has a few ideas of persecution, claiming that his sisters pick on him and are trying to get rid of him, and that he is not given enough to eat, so that he has to obtain some of his food by stealth. Venereal history negative.

Physical Examination.—The general appearance is that of quite a large young man who has a very peculiar stooping attitude, shambling and clumsy gait, of a general unkempt appearance. The hair is curly, quite thick and very coarse. The face has a peculiar bleached appearance, and is covered with large freckles. The contour of the face is that of an oblong, and strikes one at first glance as a most unusual type. It seems out of proportion to the size of body as a whole, and is asymetrical, the left side being the most noticeable, the right side slightly shrunken. This, however, is more apparent than real.

Examination in Detail.—The left eye is higher than the right, but both eyes seem fairly prominent. The supra orbital ridges are prominent, the left higher than the right, the malar bone on the left side quite prominent. Nose very thin at the base, long and rounded at the end, with dilated and thickened alae. The upper lip is pale and thicker than normal, the lower lip markedly thickened, everted, pale and droops at the corner. All of the teeth of the upper jaw are badly decayed and seem set apart wider than normal. The alveolar ridge is thickened; the teeth of the lower jaw are in slightly better condition though separated still wider than in the upper jaw. The alveolar ridge much thickened. The tongue is very large, completely filling the mouth, and is handled with much difficulty and hesitation; this is most noticeable when making the linguals or using unfamiliar terms. The tongue is creased in the center and shows the impressions of the teeth along the margins. It is covered with a thick pasty material at its base, through which is noticed the enlarged papillae; and when protruded is coarsely tremulous and deviates slightly to the right side. The lower jaw shows the most apparent change seen in the face. The lower arch being pushed forward three-fourths of an inch the circle is larger as a whole and there is a noticeable displacement of the arch toward the right side so that the upper and lower teeth do not meet on the right side. The body and symphysis are much larger than usual in all diameters. To such an extent has this enlargement progressed that the jaw angle has become obtuse, the neck seems small for the size of the head, which, as a whole, inclines forward on the chest. The clavicles are strongly curved and increased in all diameters, particularly the outer end, which is much broader, thicker, and rougher than normal.

The chest is flat and poorly developed, is flattened antero-posteriorily and moves but little on inspiration. At the lower end of the sternum there is a circular depression about two inches deep, three inches in diameter, causing the ensiform cartilage to be tilted acutely forward. The ensiform cartilage is larger than normal and very hard, with numerous elevations upon it. Similar nodules are present at the junction of the ribs with the sternum on the clavicles and the long bones. The right side is bulging with a corresponding depression in the left side, due to the existing kyphoscoliosis in the dorse-lumbar region. The abdomen in pendulous when standing. Numerous excoriations appear on the body, self-inflicted, as a result of scabies. The genitals are undersized; both testicles small and soft. The body is almost devoid of hair. Arms small; muscular development poor. The hands appear out of proportion to the arms and size of the body; they are, when hanging by the side, cyanotic, beginning at the wrist and extending to the first digit of the phalanges. The remaining portions are pale. The hands are enlarged in all diameters. The fingers are large and puffy, the creases are deep on both aspects. The nails are short, thin and elevated at the ends, are overlapped on the sides and base by the fleshy parts. The finger and thumb ends of both hands are thick and pad-like. The thumb is deflected from the hand with atrophy of thenar eminence, the hypothenar is enlarged as are all other dimensions of the hand The hands are at all times cold and bathed in a profuse perspiration. The same changes of shape and deformity just described in the hands are found in the feet. The joints in both are very movable; the thumb and great toe on manipulation produce grating sounds, but cause no pain. Both patellae enlarged, —the left more than the right. The left knee has a cylindrical, fluctuating swelling, involving the whole joint, extending from insertion of patellar ligament six inches above upper margin of patella and from the edge of the popliteal over the knee to the other border. Causes no pain on movement or pressure, no pain on walking. Grating sounds heard on passive movement of the knee. Deep palpation shows floating patella and a small point of tenderness on the anterior aspect of internal condile.

March 15th.—Examination of eyes by Dr. Fredrick, reports no change in the color or the form of the optic disc, no vascular change or evidence of present or past inflammation. Field of vision is normal, slight strabismus convergens. Right eye 20/20, left eye 18/20. Nose has deviation of septum to the left, throat shows chronic pharyngitis.

Urine Examination.—24-hour specimen, 1200 cc. Sp. Gr., 1021. Straw color, no albumin, no sugar, few hyaline casts. Urea 1.5%.

Palpation, Percussion, Ausculation.—Heart enlarged, apex beat in nipple line, no murmurs, or other vascular change found; pulse 82, soft, small. Spleen enlarged but not palpable, extends from lower border of 8th to the costal margin. Liver extends upward to lower of 5th interspace and ½-inch below costal margins. Chest negative.

X-Ray of Head, Hand, Knee and Foot.—Head: Nothing in nature of tumor could be made out, cranial vault about ordinary thickness. Upper and lower jaws show marked overgrowth with muscular attachments exaggerated. Hand: Aside from the excessive size but little change in general form. The sesamoids of thumb large. No tophi in the joints. All extremities of distal phalanges are enlarged and rough. Same conditions prevail in feet. Knee: No tophi. Patella enlarged. The internal maleolus enlarged, but no erosions or other changes show in synovial membrane.

Measurements—
Height, 6-2½.
Weight, 205 lbs.
Reach, 6-6½.
Head-Occip-front-circle, 24⅜.
Fronto-mental, 26½.
Occip-mental, 29.
Base of nose, 2-3.
Alae of nose, 2⅛.
Circle of neck, 15.
Base of nose mid-line to occip-prob, right 11 1-6, left 13.

Base of nose mid-line to ext-audmeat, right 9, left 9½.
Sub-mental process to tragus of ear, right 6, left 6½.
Circle of elbow at level of inter-cond., right 10¾, left 10¼.
Circle of waist at level styloid proc., right 7½, left 7½.
Circle of meta. carp., right 9, left 9.
Base of thumb, right 3½, left 3¼.
Circle of last phalynx of thumb, right 3 1-16, left 3⅛.
Circle of base of first digit, right 3½, left 3⅛.
Circle at base of third digit, right ⅛, left 3.
Circle at base of fifth digit, right 2 3-6, left 2½.
Thumb, right 3 1-6, left 3.
Second finger, right 5, left 4¼.
Ring finger, right 5, left 4⅞.
Little finger, right 4½, left 4⅛.
Circle of thigh at groin, right 20½, left 20 1-6.
Circle of knee at center of patella, right 14¾, left 17.
Circle of calf, right 13, left 13.
Circle of ankle, level or int. mal., right 11, left 10⅞.
Circle of foot, int. condyle, right 10⅞, left 10⅞.
Circle of base of great toe, right 3¾, left 3¾.
Circle of chest at the nipple, right 45, left —.
Patella, wide, right 2¾, left 3.
Patella, long, right 3⅛, left 2 2-3.

After completing these measurements I saw the patient at weekly intervals and gave directions as to his diet, food, etc. He is always very free in his promises to carry out instructions but never doing so. After several attempts to get the patient to go out of doors and to follow directions for his personal care and on his becoming much more irritable to such an extent that he refused to obey any request of his parents and had threatened personal violence to his sister, it was decided to remove him to a hospital where some control might be exercised over him. With a view that after a week or so of such discipline of which he seemed in need, that he would then obey his parents.

Accordingly, on June 27th he was taken to St. Mary's Hospital. Here he seemed quite contented, ate well, slept well, was taken out of doors daily, forenoon and afternoon, and made no complaints at all.

The left knee still swollen, a compression bandage applied after inunction of Guaiacol and olive oil. Under this treatment the swelling became less tense and noticeably less in size. A variation of about 1 to 1½ degrees of temperature occurring daily. It is not recorded, but the bowels did not move except on giving a cathartic, more or less tympony present all the time.

Urine examination of June 28th showed decrease in total output of urine with Sp. Gr. 1034, acid, no sugar, albumin, or cast, but loaded with urates. Three other specimens were examined, no sugar, albumin or casts were ever found. Urea decreased from 1.5% in the early part of June to 0.2%; this [illegible] examination. On July 8th, after having had the knee thoroughly cleaned the day before and put up in 1 to 4,000 Hg. Cl. 2 and a second [illegible] was operated under local anesthesia [illegible], drew off 180 cc. straw colored fluid perfectly clear, no shreds of other [illegible] examination, microscope examination [illegible] specimen gave negative results [illegible] bacteria, [illegible] a mistake, no culture was [illegible] formalin emulsion was injected into [illegible] and bandage applied. Some pain was [illegible] it in the knee this day. The next day no more pain in knee but the temperature with morning remission rose to 102. Constipation more obstinate than usual, and the day after operation patient began to have frequent vomiting spells; nothing was thrown up except the nourishment that had been given immediately preceding, always greenish in color. Temperature became slightly less each day until the fifth day, at which it became normal. Puncture wound healed; no pain in the knee. Nothing, however, would pass from the bowels except when produced by drastic purgative enema. On July 13th, the right eye was somewhat injected and slight lachrymation, but he complained of no pain but said he did not see well. July 14th, pain in the eye was worse, some ptosis present and limitation of movement. 15th, pain in right side of head and eye. Ptosis more marked, also protrusion of eye. On July 16th no movement of the eye. Ptosis complete, apparently no change in the mentality. Total blindness in the right eye. Left eye somewhat injected and vision poor. July 17th, protrusion of right eye more marked, ptosis complete, the eye fixed more prominent with some limitation of movement. Can hardly see. Temperature in the morning rose rapidly to 105.

Examination of the eye by Dr. Frederick, who reports as follows: Right eye proptosed and fixed, swelling of optic disc, veins tortuous, arteries small, no hemorrhages in retina. Left eye fundus normal with the exception of slight blurring of disc normal. Both pupils widely dilated; pupilary reaction very slight in left, none in the right. Tension not increased in either eye. On the first appearance of trouble with right eye I became convinced that this was a beginning of the end when the next day saw a marked change for the worse. Dr. Ryan of St. Mary's, with whom I had often consulted relative to the treatment of this case, also believed that the end was near and that his intractable and persistent vomiting was due to the presence of tumor, and Dr. Frederick, after examination just given, concurred in diagnosis. At the suggestion of Drs. Ryan and Fife blood examination was made, as follows: July 17th, 1907, hemoglobin, 90%. Red cells, 4,690,000. White cells, 14,400. Pmn., 63.4%. Large Mn., 6.9%. Small Mn., 29.5%. Lane, M. D. Death occurred a few hours later. Post-mortem refused by the parents.

Pathogenesis—White thinks that many of the so-called Lympho Sarcomas reported were in all probability some of the hyperplasias. It is a lamentable fact that where a most careful examination in all other respects was made, the cellular changes in the pre-hypoph were neglected, and it may be possible that in all cases that the cellular growths are one and the same. Of the various tumors described as being found in this gland post-mortem are in the order of frequency, glioma, sarcoma, lymphoma, systoma, and connective tissue tumors.

Theories as to Pathogenesis—1. White claims it to be a specific lesion of the pre-hypothysis, increase in the number of cells and this secretion of the glands, accompanied by hyperplasia or adenoma. 2. Berda believes the disease is due to a hyperproduction of an internal secretion, and this acts as stimulating or irritating substances on certain portions of the body frame work and CT. elements leading to the characteristic deformities that occur in Ac. he believes that an atrophy of the gland with a diminution in the production of its secretion will be followed by anatrophy of the body instancing dwarfs as examples, or if a Hyper. of the glands and increase in its secretion but no change in composition, we have produced the symmetrical giants

and increase of amount but alteration in character gives the typical acromegaly.

Physiology has not yet been determined. It has been extirpated in dogs, one of which lived a year and showed apathy, somnolence and a weakened gait, lowered temperature, tremors, etc. Another investigator operated on another animal successfully but no change was noticed. The preponderance of opinion points to the fact that there is a secretion produced in the prehypophysis intimately connected with the overgrowth of the CT. and bony frame work of the body, and that in the normal conditions of the glands might be the governing influence.

Diagnosis—The pronounced and characteristic picture of this disease is usually apparent at a glance. The general appearance is more striking and characteristic when seen at a distance than on a close and detailed examination. Usually the first thing noted is the bi-lateral enlargement of the extremities, the oval face, the enlarged nose, enormous lips, the beetled brow, enlarged jaw, excessive size of body.

Sometimes the diognosis must rest on no special set of symptoms but on a broad general view of onset, symptoms, signs and abnormalities and above all on progression.

Prognosis—It is absolutely bad, no case has ever been known to be cured.

Treatment—As regards a cure this is nil. So far as therapeusis is concerned it may for general purposes be divided into symptomatic, general and specific. Symptomatic and general being palliative only.

Specific Treatment, Surgery—All of the literature on this subject has not been at my disposal. I have found but one account of attempted removal of pituitary, and this with a fatal result. The case, however, was said to be an unfavorable one from an operative standpoint, the patient being well advanced in disease and very weak. Banda sees no reason why the skilful hand of the surgeon having removed successfully the gasserian ganglion, might not by persistence and perfection of the technique go on a little further and extirpate the diseased pituitary gland, for it seems in this way only is there hope for successful results in this otherwise fatal disease.

Summary—The case seems a most unusual one with the single exception of the case reported by Dana. I find none other similar. Although it is not unusual to have some mental derangement, it rarely assumes the psychopathic sexual type as shown here.

It also takes an added interest by so closely resembling the case just described, but differs, in that when the active tumor symptoms developed, it was much more rapidly fatal. The post mortem finding of the preceding case were of especial interest because of the numerous observations and differing views as to the diagnosis by eminent men, and the diagnosis only being settled by post-mortem, and in connection with this case because of their similarity in clinical appearance and a post-mortem here denied, but in view of the findings of its preceding homologue, leaving little, if any, reasonable doubt as to what one might with reason have expected to find, and in all probability was present here. The persistent absence of albumin, sugar or casts also is of interest, in that one or both are given as the classic picture. One phase of the case recalls an experience with another operative case in which some prosthetic work was just about to be done on a child's nose, when the patient just before the introduction of the needle was seen to shiver. Thinking it was due to fright, we expected to go right ahead when the patient shivered again. Then an examination of the chest was made and pneumonia was found to be just setting in; and it would have been next to impossible to convince any one, had the operation been completed, but that the same was due to pulmonary embolism.

In this case after the first rise of temperature I thought it might be due to a knee infection or possibly an idiosyncrasy to the iodoform injected into the knee. Dr. Ryan, however, gave it as his opinion that the vomiting and operation occurring in what otherwise might appear as natural order, had in reality, no connection. Subsequent happenings proved the correctness of this view as a puncture of the knee showed nothing but serum.

The evidence of tumor as shown by eye examination is also somewhat unusual, developing in the right eye only three days, and in the left only one day before death occurred. After reviewing the literature of the cases it seems a warrantable conclusion that any case that presents the ordinary bony facial changes, particularly when accompanied by the usual ones in hands and feet, may be considered a true acromegaly irrespective of whatever other complications or disease may be present.

A REPORT OF ELEVEN CEREBRAL COMPLICATIONS DUE TO ACUTE AND CHRONIC SUPPURATION OF THE MIDDLE EAR, WITH COMPLETE ANALYSIS OF FIVE CASES.*

By CULLEN F. WELTY, M. D., San Francisco.

In 53 mastoid operations, 17 of which were for acute mastoiditis, 36 for chronic suppurative otitis, I have found 11 cerebral complications, divided as follows:

Extra dural abscess, 6; serous meningitis, 2; purulent meningitis, 1; infectious sinus thrombosis, 2.

I wish to say at this place that all the cerebral complications developed as the result of delayed operation, and none of the cases that were operated early had complications at all. The chronic suppurative otitis cases that developed cerebral complications had cerebral manifestations prior to operation.

Extra dural abscess and peri-sinus abscess I group

*Read at the Thirty-seventh Annual Meeting of the State Society, Del Monte, April, 1907.

*Read at the Fourth Annual Meeting of the Nevada State Medical Society, Reno, Nevada, October, 1907.

in the same class. Anatomically the same, clinically they differ.

Four of the cases were peri-sinus abscess. Two of this group were further complicated by other cerebral affections and will be reported in full. One case of peri-sinus abscess with granulation tissue on the sinus wall was complicated by a Betzol's abscess. One case of peri-sinus abscess without any other complication. Two of the cases were from acute infections, one of which followed fracture of the base of the skull. The remaining two cases were the result of chronic suppurative otitis.

Two cases of extra-dural abscess were in chronic suppurative otitis. One case had such symptoms that an extra-dural abscess could be suspected, and was found at operation by a small fistulous communication. The other case was accidentally discovered by uncovering the dura in the middle cerebral fossa. Two cases of serous meningitis from chronic suppurative otitis. One case a purulent meningitis from chronic suppurative otitis. Two cases of infectious sinus thrombosis in acute suppurative otitis.

Case 1. Female, aged 21 years. Had ordinary diseases of childhood. Acute suppurative otitis following scarlet fever at the age of 8. The discharge continued uninterrupted for two years. Adenoids were removed and drops were used in the ear, which remained perfectly dry for one year. Since that time the ear has discharged more or less. Examination: Weber in good ear. Schwabach somewhat shortened. Rinne, right ear positive, slightly shortened bone conduction. Rinne, left ear negative, considerably shortened bone conduction, very much shortened air conduction. Right ear whisper 25 feet, left ear, whisper on contact. Acoumeter on contact. Right ear apparently normal. Left ear, caries of the attic wall with a fissure extended into the same. Some granulation tissue about this fissure with the tendency to bleed on manipulation with probe.

Jan. 19, 1905. Radical operation, closing by Korner flap. Posterior wound healed by primary union. On removing the periosteum from the mastoid, the bone showed a dark blue color. This was produced by the careous necrotic mass of the mastoid cells. The outside shell of bone was more porus than under normal conditions. The hammer and incus were almost destroyed by caries. There was a fistula posteriorly and below the facial nerve, which could not be eliminated, as it would have destroyed the facial nerve. However, it was curetted as well as possible by the use of straight and curved curettes. I wish to direct particular attention to this lesion as I consider it wholly responsible for the symptoms that will be recorded later. The wound was dressed every second or third day. The patient complained of so much dizziness, headache and pain on the side of the head that she remained in the hospital for thirty days. I attribute some of the headache to a compound astigmatism which was partially relieved by the continuous use of her glasses. While in the recumbent position she was not dizzy. When she assumed an erect position she would become very dizzy and at one time fell from her chair. This can be accounted for in but two ways, first, that of injury to the semicircular canals at the time of operation; or second, to an infection which I believe most likely took place by way of the fistula which I described before.

Twenty-four hours following operation she was reported by the nurse to be delirious. This happened two or three times in the course of as many days. Complained of headache and soreness about this side of the head, which gradually subsided. When she began to walk her gait was that of a person with a fractured pelvis. She is a highly sensitive, hysterical woman, and I attributed part of the cerebral manifestations to her mental condition. The eye background was perfectly normal.

March 27, 1905—The ear absolutely dry; hearing unimproved.

May, 1905—Sero pus began to discharge from this fistula and continued until September, 1905, at which time I again performed a curettement. This was treated antiseptically until November, 1905, when she was again discharged as cured.

Since the recovery from her primary operation she has had no cerebral symptoms of any kind.

March 2nd, 1906—Complains of intense headache over this side of the head and dizziness a great deal of the time. The whole of the temporal bone on this side was tender to pressure and the slightest percussion would elicit excruciating pain. At this time there was a serous discharge from this fistula, which in the course of two weeks disappeared entirely. The cerebral symptoms continued with acute exacerbations, at times so severe as to require morphine. Her pulse repeatedly reached 50, full and strong. She had some vomiting, which was probably due to morphin. Examination of the eye, negative. Physical examination, negative.

At repeated consultations operative procedure was recommended by all but one physician, who maintained that it was due to a nervous manifestation.

May 15, 1906—Patient entirely well. Cerebral symptoms entirely gone.

Diagnosis: Serous meningitis: Infection by way of the fistula to the semicircular canals and the aquaeductus vestibuli. This will explain the cerebral symptoms that followed the primary operation, as well as the cerebral symptoms that followed in the later infection. During the first infection the cerebral symptoms were scarcely sufficient to warrant further operative procedure, because they seemed to improve almost daily after the second or third day. However, when we are confronted with cerebral symptoms later, and the only possible source of infection is by this fistulous communication, it must be admitted that it was by this route. Furthermore, the patient had an association of cerebral symptoms, such as dizziness, headache and localized pain on the affected side which should always lead you to suspect cerebral complications, especially when all the mastoid cells have been removed. If it is not today, it will be in the near future considered conservative surgery to open and explore.

My diagnosis prior to her recovery was different. At this time I thought she had an extra-dural abscess or brain abscess, with a decided leaning for extra-dural abscess of the posterior brain fossa infection by way of the semi-circular canals and the aquæductus vestibuli. No doubt the infection traveled this route and was of a non-bactericidal invasion. I wish also to call attention to the fact that the fistula, which was discovered at the primary operation, and which has apparently been responsible for the infection that followed, should have been destroyed entirely at the sacrifice of the facial nerve, to remove all possible source of cerebral affections to follow. Or should we trust in Providence, as I did in this particular case, and almost lost my patient?

In this particular case the patient made a recovery without operative interference. This was good luck rather than good judgment on the part of the patient, and I am confident that such cases will not

often repeat themselves. In conclusion, will say that by early operation in cerebral affections you may cut short or eliminate entirely your source of infection, which, on the other hand, if allowed to remain there is but one termination, and that is death, with but an occasional exception such as I have illustrated.

Case 2. E. H., male, 28 years, clerk by occupation. Dr. Rene Bine of San Francisco very kindly furnished me with the medical history of this case, as well as the working out of the various nervous manifestations. Had measles at 17, which were complicated with pleurisy. For two years was in the tropics in good health. On his return to San Francisco 3 years ago had malaria. For the last two years has been about San Francisco, has lost 30 pounds in weight during the last 3 years. Present weight 128. Height 5 feet 7½ inches.

Present illness began about three weeks ago with cough, especially at night, and progressive weakness. Appetite good until one week ago. Has had no night sweats, no chills, but a chilly feeling when out of the sunshine. No diarrhea or constipation. No digestive disturbance except vomiting following the cough. Frequent urination, particularly during the day time. Has excessive dyspnoea on the slightest exertion. No subjective cardiac trouble. Has had chronic discharge from the ear for the last two years. It seemed to start as a chronic affair. Never complained of pain or tenderness on this side of the head. About three weeks ago had to give up work because of absent-mindedness. About three months ago began to see double at intervals. These intervals have increased in frequency up to the present time. The physical examination I will not record, as it was a clear picture and findings of pulmonary tuberculosis.

Examination December 29, 1905. Pupils dilated and unequal. Respond to light and accommodation. Left dilated more than right. January 3, pupils dilated, left more than right. The assistant says dilated more than three days before. Respond to light and accommodation. Apparently no vision of the right eye. Slight lateral nystagmus. When finger held below the level of the good eye sees double, otherwise normal. No changes in the disc apparent. January 2, 1906, it was noted that the right eye could not be completely closed. The lower lid drooping and the upper lid with little resistance. Facial paralysis of the right side. The lines of the forehead and cheek were obliterated. Mouth drawn to the opposite side. Left side of face slightly flushed and warmer than the right. Neck very rigid. Regarding flexion of spine it moves as a whole. Patient can be raised to the sitting posture without flexion of the spine by the hand behind the head. Patient cries with pain when the neck is forcibly flexed. Head rotated slightly to the left. Reflexes of right arm present and normal. Considerable spacticity; reflexes of left arm normal, no spacticity. Right patella reflex slightly accentuated with spasticity. No marked Oppenheim on the right. Questionable Oppenheim on the left. Questionable Rabinski on both sides. No ankle clonus. No patella clonus. Achilles tendon reflex very slight. Cremaster reflex absent on right, very active on left side. Abdominal reflex not elicited.

Examination of the ear: Discharge of foul smelling pus from the right ear. The posterior superior wall of the meatus was so swollen that it formed an ellipse instead of a circle. The tympanic membrane could not be seen. Some pain on deep pressure over the tip of the mastoid.

Diagnosis: Probable meningitis, with possibility of brain abscess.

January 4, 1906—Patient unconscious for the last twenty-four hours. Paralysis of the opposite side and partial paralysis of the same side. Radical mastoid operation. Pus under considerable pressure. Mastoid cells full of granulation tissue, and a mass of cholesteatoma. Dura of the middle fossa uncovered very easily. Dura bulged into the operative field so that the edges of the bone could not be seen. No pulsation of the dura. Dura incised. Large quantities of serous fluid escaped. The brain still bulged into the dural wound. Was incised in three different directions. Followed by the escape of considerable serous fluid, which undoubtedly came from the lateral ventricle. There was some question as to the possibility of tubercular meningitis because of the lung tuberculosis. This is of course possible. However, in a case of chronic purulent discharge from the ear with localized pain, facial paralysis, and bulging of the posterior superior wall, all of which speak for pus retention, we must at once assume that such is the case, and deal with it accordingly. This may be tubercular infection of the middle ear and the mastoid cells because it began as a chronic discharge. There was no acute manifestation of an inflammation. This is in accordance with tubercular infection of the ear. On the other hand, he had measles when 17, and it may be that he had had an acute suppurative otitis then and that it had been more or less quiet until two years ago. The finding of the cholesteatoma speaks more for the latter. The man died twelve hours following operation. The microscopical post mortem findings did not reveal any giant cells in the part of the dura, or the brain, that was examined. There was no exudate. From our findings and our lack of findings we must conclude that it was a serous meningitis dependent upon ear infection.

Case 3. By Dr. F. B. Carpenter. L. B., male, age 12 years. When five years of age had scarlet fever, which was complicated by an acute suppurative otitis. Otherwise perfectly well. The ear discharged more or less for the following four years. At times it would completely subside. The ear would remain perfectly dry for three weeks to two months, when he would have more or less pain in the mastoid region which would be followed by a discharge. Sometimes this pain was very slight and sometimes it was distributed to the whole of the temporal bone on this side of the head. During the four years the pain was never severe enough to keep him in bed. Many times with the subsidence of the pain in the discharge from the ear would cease. During the last three years there has not been any discharge from the ear. However, he has had six distinct attacks of fever and pain in the region of the mastoid, tenderness increasing in severity with each attack. They usually last two to four days and the patient is up and about. The present attack is much worse than the former ones. He has not been able to sleep for four days because of pain and tenderness on this side of the head. Temperature 102½, pulse 120. Examination: Right ear normal, left ear stands out from the head more than the right ear. Hot to touch in comparison with the other ear. The whole of the temporal bone sensitive to pressure and extremely so at the tip of the mastoid. Drum membrane entirely destroyed and part of the attic wall. The ear is perfectly dry. An unusual fullness between the inner wall and the attachment of the tympanic membrane posteriorly. Weber in bad ear. Schwabach lengthened. Rinne, right ear positive, about normal. Rinne, left ear negative, lengthened bone conduction, shortened air conduction. Whisper, right ear 30 feet, left ear 4 feet. Immediate operation recommended, which was done the following morning.

Feb. 5, 1907—11:30 a. m. Radical mastoid operation, closing by the panse flap. Large pneumatic mastoid. The attic and antrum were filled with cholesteatomatous masses. The large and small mastoid cells as well as the cells about the zygoma

were filled with cholesteatoma. There was but little pus at various places throughout the mastoid. All the cancellous bone was removed. The sinus was accidentally uncovered. Operation completed.

During the afternoon and evening, patient complained considerably of pain on this side of the head, and in the ear. Vomited several times. Temperature dropped to 99.6. The following morning temperature 100.8, pulse 106, respiration 104. Complaining of pain in the ear, and on the whole side of the head. Vomited several times. Evening temperature 100.4, pulse 96 and respiration 24. Second, third and fourth days cerebral symptoms persisted, increasing in severity from day to day. Complains of pain almost constantly, dizziness a great deal of the time. For two nights the pain was so severe that morphine was necessary to keep him quiet. The fourth day the right pupil more dilated than the left reacts to light and accommodation. The papilla of the left eye more injected than the right. White blood count 20,000. Bacteriological examination of pus in mastoid, streptococci. On the evening of the fourth day a second operation was done for purulent meningitis. On exposure of the dura it was found to be red and inflammed. The bone was removed until healthy dura was uncovered. Should say that the uncovered area was somewhat larger than a silver dollar. The dura bulged into the cavity made by the removal of bone, and no pulsation was noted. The dura was incised and at the same time a meningeal vein was cut which gave considerable trouble in ligating, so as to what escaped I am unable to say. A culture was made which proved to be streptococci. After the hemorrhage was stopped the brain pulsation was quite normal, and the operation brought to a close. Salt infusion per rectum administered. The reason the brain was not incised was because it did not protrude, and because there was pulsation.

Vomited some during the night. Did not complain of pain during the night. Pupils normal in the morning.

Fifth day—Temperature, 102.2; pulse, 102; respiration, 24. Complains of pain in the head occasionally. More rational than before operation. Temperature, 100.8; pulse, 72; respiration, 18.

It will be noted that the temperature has increased rather than diminished. All this speaks of further infection. From the fifth day to the eleventh the cerebral symptoms continued to increase. Headache and pain on this side of the head almost constantly. Delirium increasing in severity from day to day, rational at times. Twitching of the muscles of both sides of the face, hands and arms. The following day paralysis of the hands and legs of the opposite side. Nystagmus. Cannot see at all. At intervals rational, when he complains of pain. This condition is increasing in severity, complete paralysis of both sides, complete blindness and no rational moments. Following the second operation the cerebral symptoms were more pronounced. My explanation of this is that the meningeal infection became more aggravated. This case illustrates very well what disastrous results follow in neglected cases. No doubt this boy had had meningitis a long time before he was operated upon. His temperature never fell to normal. The lowest was 99.6 the morning following the operation, increasing a few tenths every day, with increasing cerebral symptoms. Had the infection taken place below the operated area the fever would not have appeared so soon. The same is true of all surgical infections. From a misunderstanding, autopsy was not secured.

Case 4. J. C. S., male, 75 years of age. Medical history by Dr. H. C. Moffitt. Father and mother died of old age. Mother died at 70 from malaria. No severe sickness in family. Patient has always been well. No pneumonia or typhoid. Was in the army and had a sword wound over the left parietal. Has had malaria. Denies specific history. Five months ago had an acute suppurative otitis of the left ear. Has had headache over this side of the head ever since. At times it is very severe. The severe spells come every third day and are increasing in severity. Pain only on this side of the head. Memory failing. Hearing gone in left ear. Pain in left occiput running down neck. Appetite is poor at times due to nausea. Has no vomiting spells. Bowels regular, urine negative. Has noted laryngeal cough from fluid discharged in the pharynx. Has no dizziness. Has lost forty pounds in four months. Tenderness at back of neck when pain is felt. Has had to take morphine constantly for the last two months. No temperature nor chills. Examination: Pale, emaciated, evidently in much pain. Holds head stiff. Can not bend it forward without much pain. Tenderness over the upper three vertebrae. A little swelling a little to the left of the upper three vertebrae as well as back of the mastoid. Most tender between mastoid and vertebrae and on deep pressure is felt a swelling that feels partly periosteal and partly of the soft parts. Along the anterior and the posterior borders of the mastoid are glands dwindling from above downward, the largest the size of a bean, somewhat tender. Pain along left jugular, but no tenderness. Pulse in jugular. Pupils small from morphine, but react to light and accommodation. No nystagmus. Fundus not examined. Skull not tender. No facial nor trigeminous. No change in reflexes. No swelling of vertebrae from the mouth. Examination of nasal pharynx leads to a discharge of considerable quantity of pus.

Probable diagnosis: Extra dural abscess; sarcoma in the posterior fossa; necrosis of the Atlas or a sinus affection.

Ear examination by myself: The ear stands out from the temporal bone more than the ear from the opposite side. This ear is hot in comparison with the ear of the other side. Some swelling of the mastoid, but particularly back of the mastoid. Sensitive over the whole of the mastoid, but especially back of the mastoid. Some pain down the side of the neck. The pus is small in quantity and very offensive. There is decided bulging of the posterior superior wall. A small perforation in the tympanic membrane. Weber in bad ear. Schwabach lengthened. Speech on contact in this ear.

September 15, 1905—Radical operation. Started to do the operation for acute mastoditis; however, I changed it into a radical operation, because the pathologic findings were so extensive that I thought it could not be thoroughly removed without the latter procedure. Pus under the periosteum. The perforation was near the tip of the mastoid. On removal of bone, pus and granulation tissue welled into the cavity uncovered. The individual cells were largely destroyed and instead a large cavity was present. In curetting away the granulation tissue, I suddenly encountered more pus under considerable tension. After further curettement I was able to demonstrate that this latter pus was in the sinus and separated from the pus in the mastoid by granulation tissue. I curetted the jugular end of the sinus as far as my curette would go and packed with iodoform gauze. The other end of the sinus was nicely sealed and the patient had no symptoms of pus infection, so the clot was not disturbed. The jugular was not ligated for the same reason. The only explanation that can be offered for this is that of a pneumococcus infection. Docent Dr. Alexander of Vienna reports a similar case about two years ago, saying that he had made a thorough search of the literature and was unable to find a similar case on record.

The patient made an uninterrupted recovery. He

did not have any chill, fever, or sweat during his illness.

Case 5. Male, age 33 years, machinist by occupation. Had ordinary diseases of childhood. Has never been ill that he can remember. On January 21, 1907, while slightly under the influence of alcohol, fell, striking the back of his head. Says that he was somewhat dazed for a time and noted that he had a discharge of blood from the right ear. The following day noted a serous discharge from the ear and that it was tinged with blood. Also noted that he could not hear so well from this ear as formerly. Three days following the injury had a chill and some fever. Some pain in the ear and some pain in the mastoid region. This subsided gradually during the course of ten days. He returned to work for a short time, when he again had pain and tenderness back of the ear. Stopped work for three or four days and then again felt quite well. This fever, pain and tenderness has continued interruptedly for the last six weeks. Three days following the accident, pus began to discharge from the ear and it has continued up to the present time and is of a very offensive odor. There has always been more or less pain confined to this side of the head, at times much more intense. Of late the pain is increasing in severity and occurring more frequently. For some days past, says he has had fever. No chills or chilly sensations. Ear examination: No swelling of the soft parts about the mastoid. No increased surface temperature. Slight tenderness over the whole of the temporal bone. Very sensitive over the tip of the mastoid. There is an offensive discharge from the small perforation below the end of the hammer. The tympanic membrane was bulging to such an extent that the landmarks were completely obliterated. The bulging of the posterior superior wall was so marked that it helped to obliterate the membrane. Temperature 102.5, puse 110. Operation recommended.

As the following day was Sunday we did not operate until Monday, his temperature remaining at near 103 the whole of the time.

Acute mastoid operation. Nothing of note on removal of the periosteum. After removing the outer shell of the mastoid a blood clot was found that was partly broken down and intermingled with pus. The clot began just back of the posterior osseous wall of the meatus, extending horizontally across the mastoid to the wall of the sigmoid sinus. On removal of the blood clot, granulations, tissue and pus, the fracture could be traced through the posterior osseous wall of the meatus, exposing the mastoid, fracturing and uplifting that part of the mastoid that covers the sinus; between the sinus and the broken bone there was pus and new organized connective tissue covering part of the sinus wall. The sinus was uncovered until it appeared perfectly healthy. There was pulsation in the sinus and it was compressible. The balance of the mastoid cells and the cancellous tissue was removed and the antrum opened freely and operation completed.

As will be noted from the temperature chart, the temperature did not drop as was expected. Wound dressed the second day following operation. No pus in the external meatus. Everything looking well in the mastoid wound. The third day the temperature remained about the same. I decided that the sinus should be explored the following morning. When I called on the fourth day the temperature had fallen considerably and the patient was feeling comfortable. I decided to postpone further operative procedure. In less than half an hour following my visit the patient had a chill and the temperature went to 104, as you will see by the temperature chart. This temperature chart illustrates very beautifully the rise and the fall of the temperature, with the chills and the perspiration that followed. During the fifth day the patient began to experience pain in the right knee, which was bandaged and hot applications applied. The following day, six days after first operation, I decided to open the sinus. The new granulation tissue was curetted away, all parts made clean as possible; pulsation could be felt in the sinus. Besides, it was compressible. There was no pain along the jugular at any time. The lateral sinus was freely incised. The jugular end of the sinus did not bleed as much as the other end. At any rate I concluded that there was a partial thrombus and I curetted and packed with iodoform gauze. The distal end was plugged without curettement. The jugular was ligated and the operation completed. The following day the patient had a chill and temperature of 104. The same day the knee was punctured and the secretion showed to contain a pure culture of streptococcus. The knee was freely opened the same day. There was considerable bloody pus found. You will note from the temperature chart the decided fall that followed this operation. You note another rise in the temperature chart about two days following this knee operation. I account for this by the fact that the mastoid wound had not been dressed for three days. You also note in the temperature chart that there was a gradual fall following this dressing.

Dr. Alvaris has done some bacteriological work for me on this case, of which I wish to speak and has furnished me with the following data: Jarueth and others have recently been studying the polymorphonuclear neutorphiles and find that the number of nuclei vary considerably under different conditions and in different diseases. There are five classes of cells with one, two, three, four and five nuclei respectively; the percentage of the classes and the average number of nuclei to a cell vary. Normally the count varies only slightly from the following:

I	II	III	IV	V
5	35	41	17	2

Average number per cell, 2.76.

The polymorphonuclear neutrophiles are supposed to develop from a small myelonotic cell with single oval nucleus. A few of these are normally found in the blood. The older the cell presumably the more nuclei it has, and the older cells are supposed to be most active in the phagocytosis. If this be true, a large percentage of multinucleate cells would give a good prognosis, as the person should be more resistent to infections. This seems to be borne out clinically, but an immense amount of research must yet be done. A bad prognosis might have been given in Dr. Welty's case with pus and streptococci in the knee joints, but the differential neutrophile count showed the following percentages:

I	II	III	IV	V
4	24	34	25	13

Average number, 3.19.

As the average number seldom goes over three, the prognosis for this count was good. This was borne out subsequently. Probably the circulating streptococci had been destroyed very quickly.

REPORT OF A SUCCESSFUL SUTURING OF A DOUBLE STAB WOUND OF THE FEMORAL ARTERY, AND A SINGLE WOUND OF THE FEMORAL VEIN.

By HARRY M. SHERMAN, A. M., M. D., San Francisco.

On the 17th of June that patient, a 16-year-old youth, sitting in school, dropped a sharp pocketknife between his legs. To prevent its falling to the floor he brought his legs suddenly together, with the result that the sharp, narrow blade penetrated deeply into the inner side of the left thigh a little below its middle. Blood at once soaked through his trousers. He left school and had his wound dressed immediately by a surgeon. Later, pain and swelling supervening, he consulted me. I found a small stab wound and a uniformly swollen thigh; I applied a snug bandage and ordered rest in bed. He had some elevation of temperature without a leucocytosis that night, and I put hot water bags around his limb and continued the rest two days longer. The hemorrhage I supposed to be venous and believed it would stop under rest and pressure. When I saw him again on the fourth day, the signs of traumatic aneurism were evident, a thrill and a bruit, and the patient was sent immediately to the University of California Hospital for operation.

Surgical condition.—About the junction of the anterior and medial surfaces of left thigh at about the middle, is a wound 0.5 cm. long, now well closed. There is considerable ecchymosis of surrounding skin. The swelling is not large, but is hard and limited to the immediate neighborhood of the wound. Very marked pulsation and thrill are felt, limited to an area scarcely larger than a silver dollar. Over this, and up and down the femoral artery a very loud bruit is heard. The pulse is easily felt in the posterior tibiol artery. There are no apparent circulatory changes in the affected leg or foot; no engorgement of veins, no oedema and no temperature change. The general condition of patient is good.

Operation.—June 25, 1907, the anesthetic was started with chloroform and changed to ether. An elastic tourniquet was applied around the uppermost part of the thigh for hemostasis. An incision was made over the aneurism, the sartorious was pulled inward, and Hunter's canal was entered through its roof. In this incision no muscles were cut. It was found that the knife blade had entered the front portion of the artery at an angle, making an opening some 8 mm. long; at a distance of a millimeter it had passed out of the artery, making another similar opening; it had then entered a large adjacent vein (presumably the femoral), making an opening about 5 mm. long. The vein was first repaired with intima-to-intima continuous suture of fine silk. The small bit of artery wall, not more than 1 mm. wide, intervening between the two wounds in the artery, was excised, and the edges of the then single wound were brought together by intima-to-intima continuous silk suture. In each case all the coats of the vessel were included in the sutures. On releasing the tourniquet there was no hemorrhage along the sutures. Without especially repairing the roof of Hunter's canal the muscles were brought together, and the fascia and skin closed in layers by catgut; the skin by the subcuticular stitch. A small drain of twisted rubber tissue was left in the middle of the wound. Dressings of dry gauze were applied, and the limb immobilized by a plaster of paris spica from foot to waist.

There is one thing to be said about the little millimetre wide strip of arterial wall between the two wounds. No suture could have been put in it. If I had sutured over it, leaving the strip in the lumen, I should have left a certain roughness and irregularity of the wall at that place, which would have invited clot formation. There seemed to be no good reason for suturing underneath it and so complicating the manipulation, and it was so narrow that its loss could only contract the vessel's diameter 0.3 mm., an unappreciable amount. Therefore I clipped it out.

The patient came out from the anesthetic well with almost no nausea. Small doses of morphia were necessary for some pain in the thigh. The first dressing, seventeen days after the operation, found primary union except in the skin, and that the subcuticular suture was not absorbed. It was removed and alcohol gauze dressing put on. The splint was not disturbed and the patient was permitted to be up in a wheel chair.

The splint was taken off twenty-two days after the operation and the patient restricted to bed again. The wound was healed and a little crust lay along suture line. On examination I found (1) no bruit at the point of suture of the vessels, (2) synchronous pulses in both posterior tibial arteries, (3) the blood pressure in the right leg 115 mm. Hg., in the left leg (the side of the operation) 110 mm. Hg., a difference of 5 mm. Hg. The artery I believed to be clear and patent. The vein might still have a trombus on its walls according to an experiment detailed in the Johns Hopkins' Hospital Bulletin of May, 1907, p. 153 et seq. (experiment 39, p. 175), therefore I decided to keep this patient in bed to complete full twenty-six days. Thirty days after the operation he was discharged well.

Postscript—four weeks after leaving the hospital—He is still well.

When I first saw this young man I found no interference with the arterial circulation, distal to his wound, and I supposed he had wounded his femoral vein and had had a fairly free hemorrhage into the tissues of the thigh which would account for the general swelling. There was no palpable thrill and I did not think of auscultating the region. Four days later, when I first felt the thrill, it was unmistakable and I am quite sure could not have been missed by anyone. The question at once arises, though I can not answer it, as to whether I might have made an earlier diagnosis had I auscultated. Next time I surely shall do so.

Some years ago I tore the axillary vein in removing the glands during a Halstead operation for carcinoma of the mamma and sutured the wound, intima-to-intima, with a satisfactory result. Sometimes I have put lateral ligatures on the internal jugular vein when I have been clumsy enough to tear a hole in it, and fortunate enough not to tear a hole too big to be thus managed. If the hole was too large for a lateral ligature, I have doubly ligated the vein above and below the wound, and all of these cases have done well. I have never sutured an internal jugular vein. The case reported tonight is the first instance in which I have had the opportunity of treating a wound in an artery.'

Fortunately for my patient, the papers of Carrel in the Bulletin of the Johns Hopkins' Hospital for January, 1907, and that of Stephen H. Watts, in the same publication for May, had come and had attracted me, so that the approved technic was known.

This latter paper has been, in large part, reprinted in the September number of the Annals of Surgery, and with it are seven other papers on the Surgery of the Vascular System. With all this recent literature in the hands of the majority of you, it is unnecessary for me to make any but brief quotations.

The matter of temporary hemostasis, during the manipulation of the artery is important, for it should be absolute and yet entail no injury to the intima. Hemostats and all purely metallic clamps are forbidden; clamps with smooth blades protected by rubber

and adjustable by a screw are permissible. Those whose experience is the greatest in experimental and surgical work say that finger pressure is the best for the artery. In experimental work the larger arteries have been, of course, the ones selected, such as the axillary or the femoral or the aorta, and most of the work on man has been on the common femoral and the axillary arteries. This precludes, in most instances at any rate, the use of an elastic tourniquet; but in all work so situated that an elastic tourniquet can properly be applied proximal to the operation field, I am of the opinion that it will be found to be the hemostatic method of choice. It did its work perfectly in my patient's case. In other situations I should select Crile's artery clamps or their equivalent, even though a finger might be preferred by some. Clamps do not get tired, and to have to hurry the suture because the assistant's finger was wearying would mean a badly placed suture, and that would quite surely mean failure from leakage or thrombosis.

I am struck, next, by the story of the evolution of the suture method as it is told in Watts's paper. From the first the management of the intima of artery and vein has been the debatable point. Reading the protocols of experimental and surgical work one must be impressed by the high percentage of failures due to thrombosis, and the chief endeavor was to prevent this. Beginning in 1889, according to Watts's paper, Jassinowsky experimented on arteriorrhaphy using silk, interrupted sutures, and not penetrating the intima. The next year Burei used the continuous instead of the interrupted suture, and no one has since reverted to the latter. In 1894 Heidenhain used a continuous catgut suture which penetrated the intima, but the method was unsuccessful. In 1899 Dorfler used a continuous silk intima-penetrating suture and this has since been the method of choice. Of course silk permits the use of finer filaments and finer needles without sacrificing strength, and so commends itself at once as the most suitable material. According to the reported experiments and the reported instances of its use in surgery in man, the vein and the artery were to be treated on the same plan.

Carrel has added another point, and one of importance, though I have to acknowledge that I did not, in my case, make use of it. He boils his silk in vaseline and places his suture, while it is heavily saturated and covered with this unguent. This makes the minute portion of the stitch which is exposed to the blood stream repellant to, rather than absorptive of the blood serum and materially lessens the chances of thrombosis. It is a detail which has rendered possible some very remarkable experiments in the anastomosing of arteries to veins, and veins to arteries, end to end and end to sides, as well as the total transplantation of organs and the replantation, partially successful, of an amputated limb.

What has been said here refers strictly to the method of placing a suture which it to unite cut blood vessel walls, whether it be for closing a relatively small wound, as a lateral suture, or for uniting a wholly divided vessel as a circular suture. Distinct from this purely suture plan is Murphy's invagination method, applicable, of course, only to wholly divided vessels. It has been successful in Murphy's own case and the two cases of Djemil Pascha, all surgical cases in man, but it seems hardly right for me, with no personal experience of circular sutures, to discuss either this or the prothetic methods of Abbe, Payer and others. For these points I refer you to Watt's paper or to the original reports.

Two other points are leakage and thrombus formation, and either may invalidate a suture. Of the former it is usually said that a slight hemorrhage between stitches will cease after a few moments of gentle pressure or the placing of one or two interrupted sutures. It happened thus in the suture of the femoral vein in my patient, there was a slight hemorrhage which ceased after a little sponge pressure. In view of the danger of thrombus formation, I should fear any clot formation, and of course the ideal suture should be mechanically "water tight" with no need for clotting to calk the cracks. The ideal suture, however, can not be attained, because sutures pulled tight enough to make the line of union water tight would cause necrosis of the tissue in the bight of the suture. There must be some clotting it seems to me, to calk minute cracks, else there would always be leakage, for the vessel's function must be resumed at once, there can be no period of enjoined rest as after enterrorrhaphy to permit sealing by adhesive process. The difficulty in making mechanically a primarily water tight suture is seen where we attempt to close the wound after removing the tumor of a spina bifida. A certain amount of leakage is the rule until adhesion of wound surfaces has taken place; and anyone who has, by unhappy chance, operated on a hemophilic, as I once did, will always thereafter have a very just appreciation of the part clotting plays in stopping the hemorrhage from even the smallest wounds.

Thrombus formation is still the chief obstacle in the way of successful work. It has stultified more than 50% of all the recorded operations, experimental and surgical. Carrel refers it to infection. He says: "A rigid asepsis is absolutely essential for success. It seems that the degree of asepsis under which general surgical operations can successfully be performed may be insufficient for good results in vascular operations. Generally, it is considered that a wound is aseptic when it does not suppurate, and when healing occurs 'per primam intentionem.' But it should be remembered that this clinical asepsis is far from the ideal condition of absolute asepsis. Between absolute asepsis and infection, which is evidenced by the ordinary symptoms of inflammation, there are many intermediate degrees of attenuated infection. It is certain that every surgical wound, though clinically aseptic, is more or less infected. This infection may not be accompanied by the classical symptoms of inflammation; or if these phenomena are present, they may escape detection. The tissues unite 'per primam intentionem,' and from a clinical standpoint all the reparative processes occur as if the wound were really aseptic. But it is very probable that the more marked degree of these slight infections may be sufficient to cause thrombosis and that in order to obtain constant good results in blood vessel surgery the degree of asepsis must be higher than in general surgery."

Watts agrees with this view, but neither he nor Carrel offers any cultural proofs of infection, and in fact, merely give their opinions. The question very naturally arises as to how quickly infection can determine clot formation. Francis T. Stewart, in the number referred to of the Annals of Surgery, reports a case of arteriotomy for thrombosis and embolism, and after the first clot, due to a contusion of the artery, had been displaced, another re-formed after the vessel had been closed by suture and before the skin could be sutured. He reopend the artery, removed the second clot and again closed the artery, only to have another thrombus form at once. It is difficult to refer this to bacterial action and perhaps it is not necessary, for the trauma to the intima had been sufficient to cause a thrombosis before the vessel was opened at all, so that the second and third clots might have been due to the same cause as the first.

J. Edwin Sweet, in the same journal, doubts that

bacteria can cause the immediate clot formation so often seen and is inclined to refer it to the tissue coagulins of the vessel walls, which gain access to the blood through the needle holes. This explanation appeals to me more than the infection etiology for the early or immediate thrombi, and probably each explanation, in the appropriate time and place is true, the common coagulation-causing-substances producing the immediate and infection the later thrombi.

Be that as it may, the great obstacle to much attractive and beneficial surgery is the thrombus and even though it seems, from Carrel's latest reports, that his final technic almost obviates the danger, we must remember that this is in the hands of a man especially expert at this particular work, while what we want is a technic that will make arteriorrhaphy any surgeon's operation, as appendectomy has come to be. At present the high percentage of failures limits the procedure to traumatic cases in which an artery is cut almost or wholly across, when a surgeon can choose between an attempt at suture and ligation. The number of operators who will deliberately open a vessel to remove a thrombus is small; the chances should be better if the obstacle to the circulation was an embolus and if an early diagnosis can be made this might prove, in peripheral arteries, a feasible procedure in the hands of many; while until the technic has been improved the transplantation of vessels and viscera will probably have to be denied to man and limited to the lower animals.

RHEUMATISM IN CHILDREN.*

By MILLICENT COSGRAVE, M. D., San Francisco.

During the past three years in the children's clinic, it has been my good fortune to observe a number of cases of rheumatism in children, and to note the various aspects under which this disease presents itself. So much so that at the present time the simplest case receives attention, while all cases of tonsillitis, growing pains and chorea are viewed with suspicion, their history taken in detail and a physical examination made.

Rheumatism manifests itself in children very differently from what it does in adults, not alone by arthritis but by tonsillitis, chorea, endocarditis and myocarditis with acute or subacute symptoms such as "growing pains," stiffness of joints, etc.

The history of rheumatism has received a tremendous amount of attention during the past years and is still a matter of dispute; many English writers regard the lesions as due to chemical substances. Fuller thought lactic acid the cause. The uric acid theory has always had followers while others believe that putrefactive substances absorbed from the intestine cause the disease. Cole of Johns Hopkins, Poynton and Payne of London, Wasserman and Friedlander of Germany, and many others considered the evidence of these views insufficient and the bacteriological theory was suggested.

The course of an attack, the tendency to spontaneous recovery, the multiplicity of the lesions, all lead to the view that acute articular rheumatism is infectious in origin. Evidence as to the possibility of contagion is not wanting. Jossereau of Paris believed this and Friedlander of Leipsic went so far as to isolate cases. However, there is no evidence of direct contagion to support this view.

Cole of Johns Hopkins examined thirty cases of rheumatic fever and no germs were found in any case. He states that in his opinion the cause of the disease has not been discovered and that it may be:

First.—A specific infectious disease, the cause of which is unknown, and the cocci a secondardy invasion.

Second.—That there is no disease such as we call acute articular rheumatism. What we call acute articular rheumatism is a mild or moderate disease of strepto-coccus origin or that acute articular rheumatism is due to a form of strepto-coccus that has not yet been differentiated from streptococcus pyogenes.

Beattie, in the March number of the *Journal of Experimental Medicine,* has a different point of view. He believes and introduces a series of experiments to prove that the diplococcus isolated by Wasserman in Germany, Poynton, Payne, and himself in Britain is the direct cause of acute articular rheumatism. To support this view, he evidences his results in a series of rabbits which he inoculated with strepto-coccus pyogenes and the micrococcus rheumaticus.

He also states that they were able to cultivate the microbes outside of the patient's body and to inoculate monkeys and rabbits, producing polyarthritis and endocarditis and other manifestations of rheumatic fever. The organism was thought to be terminal, but he produced it from patients not severely ill. Again, cultures taken at post mortems from blood of patients suffering from rheumatic fever was sterile, whereas those taken from synovial membranes showed the presence of the diplococcus.

He inoculated one series of rabbits with streptococcus and invariably obtained pus; another series with micrococcus rheumaticus and never obtained pus. In both instances he got articular symptoms, in one, endocarditis. In cases inoculated with strepto-coccus he obtained germs from blood, in cases with micrococcus, never.

His conclusions are that results from inoculations with streptococcus are different from those of micrococcus rheumatics; that micrococcus streptococcus, nor acute articular rheumatism as an attenuated streptococcical pyemia. In uncomplicated cases of acute rheumatism, the germ is not found in blood or joint exudates.

Holt believes that hereditary tendency plays a large part as the logical factor, and states that in two hundred of his cases a rheumatic family history was obtained. In my cases I find it extremely difficult to obtain any trace of hereditary influence, for as a rule the mothers deny all trace of disease in their family, which even the closest questioning fails to change, and insist all their people are healthy. Of their husband's family they usually and rather scornfully deny any knowledge or if they do tell of anything it is negative. In private practice in all my cases, a family history of some form of rheumatism has always been obtained.

Read before the Cooper College Science Club.

My cases divide rheumatism into series.

First. Those who come to the clinic suffering from acute articular rheumatism with enlarged joints.

Second. Those suffering from chorea.

Third. Those with tonsillitis.

Fourth. Endocarditis.

First, articular rheumatism: Rebecca Atkins, age nine years, brought to clinic complaining of rheumatism. Family history negative. Two other children living and well. Contagious diseases: Has had chicken pox and tonsilitis frequently. Present illness: Has had rheumatism for past six weeks. First, knee was swollen, then shoulder, now both hands. Has no appetite, can not sleep, has eaten nothing solid nor sweet since illness commenced. Physical examination: Child very much emaciated, throat clean, heart no murmur, no enlargement, accentuation of first sound, pulse rapid, but regular. Temperature, 97.6°. Respiration normal. Hands are very red and swollen. Right hand in particular. Child screams when hand is touched.

Treatment: Hands are covered with oil of wintergreen, done up in cotton, and bandaged. Tr. salicylates.

Child lived in Berkeley and did not return to the clinic, but sent a report that she was better.

Second Case. Hannah Sautell, age twelve years, complains of rheumatism. Family history excellent, four other children living and well. Contagious diseases: Whooping cough at five years, measles and mumps at six. Other illnesses At six months had attack of rheumatism in legs, cried when touched, has had it every winter since then. Had it a week ago in shoulder which was slightly swollen. When she has it in winter has very bad fever, and limbs swell greatly.

Present illness: Has pain over precordium whenever walks quickly, loses breath, is very nervous and irritable, appetite is good, sleeps well, bowels regular. Child is fairly well nourished, throat normal, lungs norma., heart has loud systolic murmur reflected to axilla.

Treatment: Liquor Potass. Arsenitis. Oil Gaultherin in Glycerine. Child came back to clinic in a week saying that she was much improved. Pain has disappeared.

Third case. Christine Sylvester, age seven years. Family history, paternal side, cancer. Maternal side, normal. Seven other children. Infectious diseases: Measles, mumps and whooping cough. Other illnesses: Is subject to rheumatism. Had attack of acute articular four months ago, in legs, arms and back. Has been complaining of pain in limbs and over heart. Child is very thin, anemic and poorly nourished. Throat, nose and lungs, normal. Heart enlarged to left apex, Mitral murmur all over heart, but best heard at apex. On right heel is a painful spot, heel is edematous. Temperature not increased. Treatment: Rest in bed, ice bag above heart. Oil Gaultheria, Tinct. Digitalis, Olive oil, lemonade without sugar, ad. lib.

The chorea cases were much more interesting, in that they were kept under observation for a longer period of time, the others not returning to the clinic after they were better and being lost sight of.

Second series chorea. Sophie Graham, age twelve years, American. Entered September 10, 1905. Family history: Father died of cancer at 36. Mother living and well. Infectious diseases: Whooping cough. Other illnesses: Chills and fever at two years. Inflammatory rheumatism at eight years, pain and swelling in limbs for a week. This was followed by St. Vitus' dance, which was limited to face and hands. Came to California from New York two years ago. Last winter had very severe attack of inflammatory rheumatism. Was in bed till April 29. Immediately chorea started in. Present illness: Child's mother noticed twitching of hands, then hands started to shake, this was followed by shaking and twitching of whole body.

Child is tall and strong looking, exceedingly well developed. Face twitches, tongue trembles. Reflexes all right. Lungs normal, a systolic murmur heard best at apex, faintly heard at base. Can hold still but wriggles and makes faces when not noticed; has marked difficulty in remaining still.

Treatment: Rest in bed, milk diet. Liquor Potass. Arsenitis. Oil Gaultheria.

15/9/05. Child much improved, can sit still easily, very little twitching; 30/9/05, child not as well, took overdose of arsenic; 15/10/05, child better.

Since then have heard from child and there has been no return of symptoms.

Rose Henzi, age fourteen years. Paternal history: Cancer. Maternal history: Tuberculosis. Infectious diseases: Measles, whooping cough, and tonsillitis frequently. Other diseases, rheumatism frequently in knee which was swollen and painful last winter.

Present illness: Child has been suffering past two weeks. Has pains in bones, suffers from dizziness, sleeps restlessly. Child well nourished, no nystagmus, eyes o. k., tongue is coated and trembles. Glands about neck ant. and post. cervical and anterior maxillary palpable. Lungs normal. Heart, pulsation over chest, no murmur. Heart slightly irregular in ryhthm, bounding and slight accentuation of second sound. Pulsation also observed in carotids. Slight twitching of face and upper extremities.

Treatment: Liquor Potass. Arsenitis.

Frank Delcanlo, age seven years, brought to clinic November 16, 1904, suffering from chorea. Father and mother living. Father very nervous. Mother well. Three sisters living, all subject to tonsillitis; one brother who has had two very bad attacks of inflammatory rheumatism and has endocarditis.

Infectious diseases: Measles, chicken pox, whooping cough, also tonsillitis. Has never had rheumatism, but has had growing pains.

Present illness: Was very badly frightened and afterwards began to twitch. Now can not stay in bed, can not sit in chair. Face, arms, legs twitch and can not be controlled. Heart very rapid, no murmur. Difficult of examination on account of uncontrolable twitching. Arms move wildly about, is very irritable.

Treatment: Put to bed on milk diet. Liquor Potass. Asenitis. Oil Gaultheria.

November 19, 1904. Three days later child worse, can not stay in bed, given chloral and bromide. Heart very rapid and bounding, eyes moving constantly. Fowler's solution continued.

November 20, child is a little quieter; November 25, child lies quietly but still twitches; December 1, child better; February 2, child still nervous and irritable, but better; February 13, child much better but wild; July 3, child again has chorea, also tonsils are red and swollen. Heart o. k.; July 6, child very restless, given Sod. Brom.; January, 1907, child again choreic; given arsenic; February, 1907; child is much better.

This has been a most interesting case throughout, being under observation constantly for two years and a half. Has varied forms of rheumatism. I also saw the elder boy who has had two very serious attacks of acute articular rheumatism with endocarditis, broken compensation and dilitation accompanied the first attack I saw and later he came to the medical clinic with a real *cor bovis*. Since last

year he has been in San Leandro and is much improved.

Mary Bertueei, aged nine years. Chorea. Mother and father living and well. Two other children living and well.

No infectious diseases. Other illnesses: Has had pain in legs. Brought to clinc for nervousness. Has pain and swelling in arm and legs. Child has all facies of chorea, has also a very stiff elbow joint, can not move arm from elbow, moves from shoulder. Moves continuously and twitches, can not touch nose with finger.

Treatment: Told to go to bed and be on milk and soup diet. No wine or coffee. Oil Gaultheria. Fowler's solution.

Child steadily improved. In six weeks arm moved normally.

Tonsillitis cases were not so numerous.

Dora De Rudue, came to clinic suffering from sore throat. Tonsils reddened, heart rapid, temperature 100. That afternoon was called to house, found child very restless and nervous. Temperature 102, heart rapid and bounding, no murmur, pulse 160. Next day child improved but pulse still 140. Next day throat symptoms entirely disappeared, heart rapid and pulse 140. Brought to clinic the following Friday, pulse weak and rapid, no murmur but irregular rhythm. Child comes to clinic once a week and is steadily improving.

Charles C., was taken ill with tonsillitis on Sunday; on Tuesday ankle very much swollen; on Thursday shoulder swollen and reddened. Heart rapid and flabby. Temperature 102, pulse 116. Went through regular attack of articular rheumatism.

Edna S., recurrent attacks of tonsillitis, always followed by swelling of joints.

We have had cases of purpura rheumatica and subcutaneous tendinous nodules in the children's clinic, but before my time.

Rheumatism in children is frequently overlooked on account of the indefiniteness of symptoms—instead of the acute abrupt onset as in adults, we frequently simply have pains in legs which are called by the mother "growing pains," an occasional swollen joint that is ascribed to a traumatism. Rheumatism is rarely dangerous to life, but very frequently interferes with usefulness on account of the cardiac complications. It rarely occurs but once and each renewed attack leaves the heart in a more weakened condition.

In summing up it seems to me that following the onset and the symptoms in these cases one can hardly doubt the specific infectious nature of the disease. The frequent ushering in by tonsillitis, the endocarditis, and polyarthritis following in some cases, the chorea in others, all point to a germ invasion. As to whether Cole and his followers are right in ascribing it to a pyemia or Beattie to a micrococcus rheumaticus remains for further study to prove. We all know that inoculations of streptococcus pyogenes are followed by articular symptoms and that both cases i. e. inoculations of streptococcus are followed by production of formic acid.

In the case of the micrococcus, Beattie states the quantity of formic acid found is large, that of strepto-coccus while present, is found in small quantity.

A FEW NOTES ON CLINICS FOR DISEASES OF THE SKIN.

By DOUGLASS W. MONTGOMERY, M. D.

The following cursory notes written for my own pleasure while on a short trip, have no pretension to being at all exhaustive. They may, however, interest my friends for a few minutes, and if so they will serve their purpose.

Before boarding the steamer at New York to cross the Atlantic I called on Dr. J. A. Fordyce, who kindly invited me to see his service in the City Hospital. The City Hospital turned out to be what I knew twenty years ago as Charity Hospital, and it was explained to me that it hurt the patients' feelings to be treated in an institution called a "Charity Hospital," so the name was changed. How pleasant it is to feel that even such patients have some recollections of what self-respect is, and, as if in accentuation of this mental attitude, the first patient seen had pediculosis corporis. Lice had so long pastured on his body that indelible traces were left, as extensive areas of pigmentation. Throughout these areas there were many light colored spots having superficially the appearance of scars. The pigmentation was particularly deep in the flexures. The interest of the case lay in a decided and recent loss of flesh, marked anemia with eosinophilia, and some chloasma spots on the cheeks. The deep pigmentation alone has often led these cases to be mistaken for Addison's disease, and when one gets in addition, as in this case, rapid loss of flesh, anemia and pigmentation of the checks the chances for error become so imminent as to be interesting.

In this patient the rapid loss of flesh had produced a curious change in the skin of his abdomen, that was shrivelled and puckered up like an old empty leather bag, a fitting emblem of the man's diminished fortunes. It may be, however, that the creepy beasties this man had had in his clothes had really been a dispensation of Providence, acting in the way referred to by David Harum in speaking of fleas, namely that a certain number of fleas is good for a dog, as they keep him from brooding and reflecting on the fact that he is a dog. In this view this was but another illustration of Emerson's doctrine of compensations.

The next patient Dr. Fordyce showed me was a young fellow afflicted with eczema scroti. The word "afflicted" is perfectly applicable in this disease, for the patient is scourged, whipped and stung by his malady. In addition to this exquisite torture the affection is apt to be obstinate, and under such circumstances relief may be awaited, though not patiently. In the instance under consideration there was a hard thickened scaly patch with much itching on the front of the bag. Considerable amelioration had been obtained by a course of lotions of resorcin gradually increasing in strength from ten to thirty per cent. till a decided inflammatory reaction was secured. Then the part was treated with a calming lotion till the inflammation subsided. It was a variety of the old principle of arousing enough inflammation to carry away with the accelerated and

increased lymph stream the old inflammatory induration. The patient himself, was so pleased with the result of the first course of treatment, that he wished immediately to enter upon another.

After leaving New York, and enjoying an uneventful voyage across the Atlantic, we landed at Bremen and went on to Hamburg. In Hamburg I had the pleasure of visiting the large venereal service in the general hospital, the Hospital of St. George, with Dr. Arning. This institution is admirably outfitted. Of syphilis alone, about seven thousand cases are treated annually. Other than the venereal diseases, however, I saw only a few instances of psoriasis, one widespread lupus, and one pityriasis rosea. The service is what one might call monotonously depraved. Dr. Arning was employing a new treatment for chancroid. Every one is aware how tantalizing the treatment of these ulcers is. They may be sluggish in healing, or new ulcers may break out; or even when healed it is not infrequent for the scar to break down, and the work has to be done over again. Dr. Arning finds that by treating the ulcer with a hot jet of permangamate of potash, he gets a rapid solid healing without breaking down. This clinic should be an excellent one in which to study syphilis. The material is abundant, Dr. Arning is energetic, and the pathological department is well outfitted.

It was while in Hamburg that an incident occurred that made me especially proud of San Francisco. I was telling an acquaintance of a mutual acquaintance in San Francisco whose course in a certain transaction had not met with general approval. "Oh," he said, "he is just like all of you out there." For a few minutes I was rather taken aback by his naive impoliteness, but keeping my temper I said: "You ought to have seen the way our local fire insurance companies met their obligations." I then told him that there were two local fire insurance companies in San Francisco, the stock of which was mostly owned within the city. The stockholders therefore lost, not alone through their fire insurance stock, but shared with others in the general calamity. I said the California Fire Insurance Company paid its obligations in full as soon as the losses could be determined. I also told him that the other company, The Fireman's Fund, lost more than ten millions of dollars; that its vaults did not hold, and that all their books were burned, thereby destroying evidence of either debits or credits; that they, however, reincorporated, found what they owed and paid in cash, at first fifty per cent. of their losses, then six per cent. and gave stock for the rest, and that the stock today is excellent. I said further that those who had insured in The Fireman's Fund have already received about seventy-five per cent. of the face value of their policies and that they would ultimately be paid in full. While I was speaking my acquaintance was looking into a microscope. As I proceeded with my recital I could see his eyebrows rise slightly, his eyes open a little and his lips part as indicating involuntary surprise, and he said in a low tone, "How did they do it? We couldn't." Until then I did not appreciate what a shot I had landed. I simply said: "You probably have no conception of the financial strength of that city, nor of the integrity of the better class of her merchants."

This resurgance of The Fireman's Fund is as gallant a piece of work as has ever been accomplished in commercial life.

From Hamburg we went to Copenhagen, and there I met one of the most amiable characters it has been my good fortune to encounter, Professor Erick Pontoppiden. He has a large and interesting clinic for venereal diseases at the Vestre Hospital, where I spent a very enjoyable and instructive morning, heightened by the fact that the Doctor speaks English fluently, having lived a long time in the Danish West Indies, where practically nothing but English is spoken.

Doctor Pontoppiden told me that the compulsory examination of prostitutes, after being tried in Copenhagen for some time, had been abandoned. This step was partly owing to the efforts of people opposed to all such examinations, and partly to the fact that no examination no matter how thorough, will enable a physician to give a certificate to a public woman that she is not liable to convey disease through sexual congress. In this clinic I saw an astonishing number of instances of the pigmentary syphilide in the usual situation, as a collar about the neck. In my own practice I see very little of this particular syphilide. This is undoubtedly due to the fact that I see very little of early syphilis in females, of which the pigmentary syphilide is a symptom. Outside of prostitutes, most women who get syphilis acquire it from their husbands. As it is to the husband's interest to conceal the disease from his wife, it is either neglected or entirely overlooked in its early stages, and so it comes about that the specialist for diseases of the skin, in his private practice, sees most of the cases of syphilis in the female in the latter stages of the disease, after the pigmentary syphilide has long since faded away.

Dr. Rasch of Copenhagen has an excellent service in the Commune Hospital, of both skin and venereal diseases. By far the most of the patients are venereal. The doctor told me that there is a law requiring all those having venereal diseases, applying for relief at the hospital, to be treated free of charge. This is a well meant effort to stamp out or control those plagues; but behold how it works! Because of this beneficent law sailors of all nations hasten to Copenhagen as being a good place to get free treatment. While in this city being cured it is not to be imagined that they are strictly continent, and no doubt many a case of infection is owing to them. This is one of the best instances I ever found of misplaced well doing.

Dr. Rasch was treating psoriasis by painting the patches with pure coal tar. The tar should only be painted on, not rubbed in, as in the latter case it is apt to cause dermatitis. In other cases of psoriasis he was using chrysarobin locally, but in very weak dosage (1-1000).

While in Copenhagen Dr. Reyn kindly showed me the Finsen Institute for the treatment of lupus.

With us in San Francisco lupus is a rare disease as even in a large practice one may not meet with more than one or two cases a year. In the Finsen Institute, however, the patients are in crowds, with the disease showing itself in all sorts of forms, and on all parts of the body. Light as developed by Finsen is the chief, though not by any means the only agent employed. The treatment by light has many disadvantages. It is long enduring, requiring from one and a half to two years for anything like an extensive case. It is tedious, for each sitting lasts an hour or more, and the sittings are frequent. It requires constant and accurate care on the part of the attendant, who has immediate charge of the patient, as the essential of the treatment is to keep the focus of light in the correct place, and also to keep the spot under treatment exsanguinated by pressure. This last is an important point, as otherwise the blood circulating in the tissues interferes with the action of the light. These two things, the accurate adjustment of the focus of light and the exsanguination of the tissues, mean that neither the attendant's attention nor her fingers may relax. Gentle reader, did you ever try to keep your attention on an uninteresting subject for an hour? or even on an interesting subject?

The treatment is not by any means always successful, and even when successful, there are frequent recurrences. With these drawbacks it is no wonder that the first enthusiasm aroused by the treatment has measurably subsided, and that some men whom I spoke to on the subject are decidedly opposed to the procedure.

The arguments in favor of the Finsen light treatment in lupus are: That it is frequently successful; that the scars following the light treatment are usually soft and inconspicuous; that the light treatment is often applicable when other treatments such as excision or cauterization are contraindicated or almost impossible, as around the eye.

The fact is that the light treatment is only a valuable addition to the treatment of lupus, and in the Finsen Institute itself they use many other forms of treatment, such as the electrocautery, pyrogallic acid, and so forth.

A curious circumstance in regard to recurrences is that they often happen far removed from the original focus. This phenomenon would seem to be opposed to our usual conception of lupus being a strictly local disease.

I asked both Dr. Reyn and Dr. Francis if they found many cases where there was tuberculosis of other organs coexisting with lupus. They said they did not find many such, although they were convinced that tuberculosis was more frequent among lupus patients than among patients afflicted with other diseases. I also took occasion to ask both these men what they thought of the nature of lupus erythematosus. They both expressed themselves as not knowing what it is, but as believing that it has no affinity whatever with tuberculosis or lupus vulgaris. In the chronic form of lupus erythematosus they use the Finsen light with success in about fifty per cent. of the cases.

I was interested to learn that Dr. Reyn had worked out the opsonic index in one hundred cases of lupus vulgaris, with absolute lack of success. He found that the variations of the index in patients suffering from lupus vulgaris did not differ in the least from those of the same number of normal individuals.

From Copenhagen we went down to Berlin where we saw a clinic of a very different nature from any hitherto encountered. In Professor Lesser's service in the Charite, Professor Hoffman has under his immediate charge quite a menagerie of monkeys, sheep, goats, and rabbits that he has infected with syphilis. While standing in the pen watching Dr. Hoffman examining some infected monkeys, I felt a slight tugging at my coat, and turned to find a syphilitic almond-eyed goat nibbling at the hem of my garment. After this I confess to having had a very creepy feeling in Dr. Hoffman's barnyard. Dr. Hoffman told me he had carried the syphilitic virus through ten goats without any apparent lessening of its virulence. The attendants handle these infected animals fearlessly, and with an air of security surprising to one aware of the virulent nature of the poison to which they are exposed. They said that no accidental infection had as yet taken place. This statement is also surprising in view of the vast number of accidental (not venereal) infections that occur in ordinary life.

Incidentally, it may be remarked that the phagadena of phagadenic chancre seems to be due to the spirocheta refringans.

The discovery of the spirocheta pallida has caused a fresh enthusiasm in the study of the origin of syphilis, and Professor Hoffman says the belief that this disease was brought to Europe by the crew of Columbus returning from America is again a favorite. If this is correct, Europe may thank America for four most interesting products, the potato, tobacco, quinine, and the spirocheta pallida.

From Berlin we went to Dresden, where I visited one of the most interesting of clinics, that of Dr. Werther. Dr. Werther has charge of the service for diseases of the skin and of the genito-urinary system in the General City Hospital. The hospital building itself is most interesting. It is the old palace of Count Markolini, and the door handles still bear the crown of the former noble occupant. Attached to the hospital there is a beautiful garden or park that is now enjoyed by the city's charity patients. This Count Markolini was a wonderful fellow, and as Marshal of the Court of George the Just of Saxony, arranged everything in the royal household according to his own ideas. He was the first to introduce Chinese porcelain into Dresden, and so to develop that industry, that has ever since thriven there. He even brought over some Chinese, to whom he assigned special apartments in the Royal Palace. It now comes about that in the rooms formerly occupied by this high and mighty personage Dr. Werther and Professor Schmorl are deeply

interested in the study of spirocheta pallida. Professor Schmorl was the first to demonstrate this micro-organism in the tissues by the Giemsa stain. Previous to that it could be objected that the micro-organism stained in smears by Giemsa, and that stained, for instance, by the silver method in the tissues, were really two different organisms, taking stains differently.

Dr. Werther showed a particularly interesting case of syphilis in a little girl of two years of age. She had still the traces of a chancre on her lower lip, and an eruption of secondary syphilis on her body. Spirocheta has been demonstrated in the chancre. She came of a family, all of whose members had syphilis. The mother while pregnant with this child, had an inunction treatment under the direction of Dr. Werther for florid syphilis. According to our usual ideas, a child born under such circumstances should be immune from inoculation by syphilitic virus. This child, however, was not immune, and later on, as we have seen she acquired syphilis by inoculation into the lower lip.

There was also in the hospital an elderly woman suffering from that very interesting affection, mycosis fungoides, who was doing badly under all forms of treatment, even under the X-ray. Usually the X-ray markedly controls this disease, and especially hinders the formation of the characteristic large tomato-like masses. It is true that even in spite of the X-ray, the patients almost always die of the disease, but usually the amelioration and comfort from the X-ray, and the retardation of the course of the disease are so notable, that the introduction of this mode of treatment can be considered one of the great advances in therapeutics. To Dr. Werther's surprise a patient suffering from mycosis fungoides, that he treated with the X-ray a few years ago, recovered completely, and has ever since remained well. This, however, is an unexpectedly good result.

In showing a young fellow with a particularly well-marked syphilitic eruption Dr. Werther remarked that he had been treated in a Nature Cure Institute. He said he got some of the most neglected cases from such institutions where the patients were told that the eruption breaking out showed that the disease was coming to the surface. When their money was gone, however, they were given minute directions how to find the city hospital. The ways of the quack, resting as they do on the solid basis of human nature, are strikingly similar all the world over.

I doubt if irregular medicine is any less frequent in Germany than with us. For instance, while in Hamburg, I entered a pharmacy where a man who seemed to be the proprietor was in earnest conversation with a customer. They were talking quite distinctly, and were so situated that I could not help hearing what they said. The customer was telling anxiously of his wife, who had a serious dysenteric attack. The druggist listened to him, and finally gave him a small bottle of medicine, directing precisely how it should be taken. For the medicine the charge was seventy-five pfennigs, about eighteen cents, and nothing was said about a fee for advice. This was cheaper than having one's hair cut. It may be that the husband had heard the French adage: "If you lose your wife and fifteen cents, it is a great pity for the fifteen cents."

From Dresden to Prague is but a short and pleasant journey, with an interesting city at the end as a reward for one's trouble.

Professor Kreibich has now the Clinic for Diseases of the Skin, formerly held by Professor Pick. The University Medical School is peculiar in that it is bilingual, there being a German and a Bohemian service. The hatred between the two races is so intense that they will not even be sick together.

Professor Kreibich showed me several cases, among them three patients suffering from dermatitis herpetiformis. Dermatitis herpetiformis is an affection in which American dermatologists take a special pride, because of the part played by Louis A. Duhring of Philadelphia in elucidating it.

After leaving Prague, we went by way of Nurenberg to Munich, where I did myself the pleasure of calling on Professor Posselt. Among his cases were two that were treated with the continuous water bath. One of these was afflicted with pemphigus, The other suffered from dermatitis exfoliativa that was said to have developed out of a forerunning psoriasis and seborrheic eczema. This man had dwelt in his tub for several years. Occasionally he would try the experiment of living in the open, but the itchiness, dryness and burning would soon become so intolerable as to drive him back into the water again.

In visiting the hospitals in Germany one is struck by the vast number of patients suffering from syphilis. Surely syphilis is not so common with us as it is on the continent of Europe, although it must be rapidly increasing with us too. This is one of the most sinister prices we pay for increasing population and increasing commerce, increasing cost of living, and its attendant postponement of the age of marriage.

Another observable feature is the number of lupus patients, and the hopeless tone assumed when speaking of the treatment of this disease. When I would mention how few cases of lupus we have in California, "Remain happy in their absence" would be the almost invariable answer.

As regards the treatment of syphilis, mercury still holds the first place, and one could see by the blue marks on the patients' skin that in clinic after clinic the inunction method was the favorite. It was so much the favorite in fact that it was seldom mentioned, although many other ways of introducing mercury were adverted to. Good wine needs no bush, and mercurial rubbings speak for themselves. Some men were using intramuscular injections of salicylate of mercury, which undoubtedly are good, and some the bi-chlorid of mercury, which also are excellent. One man apologized for not employing inunctions, saying that one of his assistants was desirous of trying a new preparation much advertised

as an intramuscular injection, but which left a fine trail of mercurial stomatites behind it. One man was using the sosoiodolate of mercury.

During my journey I heard much of atoxyl as a remedy for syphilis, but saw very little of it used. One man said he used it if he found mercury to disagree. After using atoxyl for a time he would drop it, and recur to the use of mercury, which he would now expect to agree. To get decided antisyphilitic effects from atoxyl, however, it has to be pushed to its physiologic limit, and there is danger that the patient may become temporarily blind. There is no occasion for insisting on the gravity of such a situation, as a perambulating case immediately becomes a hospital case. It is no wonder that many are entirely opposed to employing this drug against syphilis. Max Joseph, for instance, not alone did not advise atoxyl as an antiluetic remedy, but warned his hearers most emphatically against its use.

Our return home was as uneventful and pleasant as any part of our journey. It is profitable and enjoyable to see other cities, other peoples, other ways of living, but this is only a foretaste to the pleasure of again seeing San Francisco's magnificent bay.

"Happy indeed is he who returns home after a good voyage."

SUBJECTIVE SYMPTOMS AND PAINFUL SENSATIONS IN HEART DISEASE.*

By E. SCHMOLL, M. D., San Francisco.

The subjective symptoms and painful sensations in heart disease, and the reflex symptoms due to disturbed function of the heart, have attracted very little attention except in angina pectoris. In this disease, pain has monopolized the attention of observers to the exclusion of other symptoms.

It has been held an axiom that heart disease runs a painless course as long as the heart is well compensated. Potain used to say that when a patient complained of pain about the heart the presumption was against his having any heart lesion.

Close study of a great number of diseased hearts during the last two years has led me to the conviction that in every case of heart disease we have painful sensations, and that these sensations range from the hardly perceptible sense of constriction in mitral insufficiency, to the annihilating pain of coronary sclerosis.

The study of the symptoms during an attack of angina pectoris and the symptoms occurring between attacks, and the checking up of these observations in ordinary cases of heart disease, have shown me that the symptoms are due to a segmental lesion of the spinal cord caused by reflex irritation from the heart. This reflex irritation takes place in every case of heart disease. The intensity of the symptoms depends on many factors, but, in a general way, is proportionate to the intensity of the pathological lesion.

In the heart disease of most unfavorable prognostication—coronary sclerosis—the symptoms are most severe.

Reflex symptoms of heart disease can be divided into three groups: sensory, motor and vaso-motor symptoms.

At certain times, these symptoms exacerbate for a short period and are felt as attacks. The same symptoms, however, are present more or less constantly all the time.

We shall begin a discussion of the reflex phenomena of heart diseases with an analysis of the symptoms present in a painful attack caused by coronary sclerosis.

Our attention was first called to these symptoms by Mackenzie's brilliant researches on referred pain in visceral lesions, and confirmed and put on a more solid basis by the work of Head. The application of these researches to an explanation of the symptoms of angina pectoris was first dwelt upon by Gibson, in his well-known work on neuroses of the heart.

(a) The sensory symptoms can be divided into sharply defined groups: firstly, the sensation of impending death; and, secondly, pain in the heart and surrounding structures. While the sensation of impending death monopolizes the patient's attention and stands in the foreground of his description, our interest is principally concentrated on the pain and its irradiations. In the great majority of cases pain is retrosternal, and thence invades the eighth cervical and first dorsal segment. Many segments may be involved, very frequently the fifth and sixth cervical, occasionally the lower dorsal segments. I have found that the pain may irradiate in practically every segment, between the second cervical and the twelfth dorsal. Usually, several zones of pain exist, between which pain free areas are interspersed. In the majority of cases, the pain begins in the middle line and radiates toward the periphery. In other cases, pain appears over the whole area supplied by the corresponding segment at once.

In a few cases, I have seen the pain start from the periphery and progress toward the middle line (beginning of pain in the fingers). In most cases the pain is left-sided. In such event the lesion corresponds to left-sided affection—either a disease of the aortic valves, of the aorta itself, or of the coronary arteries.

Sometimes the pain is bi-lateral. In such cases, I have always been able to find a right heart lesion. In these infrequent right-sided cases, the mitral valve is usually affected. In a case observed lately, the patient suffering from mitral insufficiency with a dilated right ventricle, the pain started in the precordial region and radiated to the right side within the boundaries of the third and fourth dorsal segments. Pain existed in the eighth cervical and first dorsal segment of the right side, radiating downward into the fingers.

(b) Motor symptoms can show themselves either in the form of irritation or paralysis. As

* Read before the San Francisco County Medical Society.

an irritative symptom, we consider the sense of constriction around the chest, which the patient usually compares to the constriction of a band, or to an iron hand grasping the heart. This sensation is caused by a tonic contraction of the intercostal muscles.

Very frequently we find tonic contraction of the pectoralis major, corresponding to the spasm of the abdominal muscles over the inflammed peritoneum—a point which Mackenzie first drew attention to. In other cases, I have observed clonic contractions. In the case of right-side angina pectoris mentioned above, clonic contractions of the pectoralis major, deltoid muscle, and the muscles of the forearm occurred with every attack of pain. In such cases, as the pain passes off, very frequently paralytic symptoms follow the symptoms of irritation. In the great majority of cases, however, the paralytic symptoms are pronounced throughout the attack, without any preceding irritative symptoms. The left arm is usually powerless and cannot be elevated. The patient is unable to hold things in the left hand. Sometimes the motor symptoms are more pronounced than the sensory. I have seen a case in which typical attacks of angina pectoris alternated with attacks of transitory paresis of the left arm.

I treated a merchant, age fifty-four years, in whom, beside the signs of general arterio-sclerosis, a dilatation of the arch of the aorta was found. Several attacks of typical angina occurred after unusual efforts or mental strain. During these attacks, the patient observed that he was unable to elevate his left arm. Occasionally attacks occurred, caused by the same factors, in which the only symptom present was paresis of the left arm without any pain whatsoever. These attacks lasted but a few minutes, but they caused mental anguish not less than that which was caused in the same patient by the painful attack of angina pectoris.

(c) Vaso-motor symptoms. Changes in the blood distribution during an attack have never been missing in any attack I have seen, nor in any description of an attack given me by an intelligent patient. Usually, the vaso constriction can be first observed in the segment into which the pain irradiates, and only later it attacks the blood supply of the rest of the skin.

I have observed two cases in which the first sign of a beginning attack consisted of such a vaso constriction of the left hand that it resembled the hand of a corpse. In other cases, vaso dilatation precedes vaso constriction, the hand becoming cyanotic.

In some cases, vaso-motor symptoms are the most marked and occur with very little sensory or motor disturbance. Such cases were first described by Nothnagel as vaso-motor angina. Curshman has recently published the records of two such cases, and has proven by autopsy that they were caused by coronary sclerosis.

Examination of the patient at intervals between attacks shows that the same symptoms exist in an attenuated form, and that sensory, motor and vaso-motor disturbances are produced in the segments affected during the attack.

(a) Sensory symptoms exist in the form of hyperaesthesia of the segments, in which the pain prevails during the attack. This hyperaesthesia can be shown by any method used for ordinary neurological examinations. Usually, I follow the sternum with a pin, which I apply with equal pressure over the whole surface. As soon as the hyperaesthetic area is touched, the patient complains of being pricked by the pin, or of a burning sensation.

These hyperaesthetic areas, to which Mackenzie and Head first drew attention, are absolutely constant. I have never missed them in any case of angina pectoris. Their objective character is proven, as Mackenzie has first shown, by the appearance of a goose-skin reflex over the area of the diseased segment, and by dilatation of the pupils.

Hyperaesthesia involves not only the skin, but also the underlying muscles, as is easily shown by squeezing of the muscles corresponding to the involved segments. This hyperaesthesia corresponds, as already stated, to the distribution of the spinal segments, and to the distribution and irradiation of the pain during the attack. A very conclusive demonstration of this I saw lately in the case of right-sided angina before mentioned. In this case, beside the irradiation in the eighth cervical and first dorsal segment, pain occurred in the right lumbar region and the hip joint. Examination showed typical hyperaesthesia over the eighth cervicle and first dorsal segment, and the second zone over the third and fourth dorsal segments. Corresponding to the third zone of pain, typical hyperaesthesia could be shown in the first and second lumbar segments.

In the intervals between attacks, patients are by no means free from pain, but complain more or less constantly of painful sensations over the hyperaesthetic areas. There is usually some shooting pain, or distinct soreness over the afflicted parts.

Sometimes the pain feels like a rheumatic pain, thus accounting for the painful sensations in the left shoulder-joint, which heart patients often complain of. Very frequently we find shooting pain in the left arm most intense around the elbow. In other cases, the patient complains more of paraesthesias of numbness in the last two fingers. In other cases, we find, instead of a hyperaesthesia, an anasthesia, in segmental distribution. In a case described by Gibson, anaesthesia of the left side of the thorax and the inside of the left arm were found.

(b) The motor symptoms in the interval between attacks consist of paretic conditions, or irritative symptoms.

Generally, the tonus of the muscles corresponding to the hyperaesthetic areas is increased. This is most easily detected in the pectoral muscle, which, in comparison with the muscle of the other side, is decidedly hypertonic. This hypertonicity, however, does not correspond to an increase in strength. A comparison with the corresponding muscles of the

right side shows that strength is diminished in very much greater degree than would correspond to the physiological difference.

Very frequently the left arm measures 1½ to 2½ centimeters less than the right arm.

A typical case of paralysis following repeated attacks of angina pectoris, in which the patient lost the ability to grasp anything, or to carry an object in his hands, has been described by Gibson. Mechanical and electrical irritability was considerably increased, while the muscles themselves presented considerable atrophy.

Complete paralysis of the muscles of the diseased segments is rare, and I have never observed it. However, several cases of this kind have been described. In a case reported by Eichhorst, paralysis, with reaction of degeneration, had occurred in the muscles innervated by the ulnar nerve in a patient presenting the symptoms of angina pectoris.

(c) Vaso-motor symptoms, in the intervals between attacks, are usually not as well marked as the motor and sensory symptoms. While the action of the vaso-constrictors is usually more pronounced in the attack, vaso-dilatation prevails in the interval between attacks, so that the hands usually present a cyanotic tinge due to vaso-dilatation. In some cases, this condition alternates with attacks of vaso-constriction, in which other symptoms of angina are missing. In these, such a vaso-constriction takes place that the hand becomes absolutely exsanguinated, and the symptoms resemble those of Raynaud's disease to such a degree that the differential diagnosis is often a matter of great difficulty.

I have observed a number of these cases, and shall report them in the near future. The report of one case, referred to me by Dr. Philip Thomas, will be sufficient to show the principal points. The patient, a female, age twenty-nine years, presents the typical symptoms of aortic insufficiency, complicated with typical attacks of anginoid character, in which, beside the pain, paresis of the left arm and complete anemia of the finger tips are very pronounced. Occasionally, attacks occur in which the blood circulation through the fingers seems to be entirely stopped, and the hands resemble those of a corpse. These attacks last for several hours, and are not accompanied by any appreciable amount of pain. They are very frequently caused by exterior influences, as immersion of the hands in cold water. Evidently the explanation of this phenomena can be found in an increased excitability of the reflex-arch.

As I have already stated, similar symptoms affecting the motor, sensory, and vaso-motor functions of certain spinal segments more or less identical with the symptoms of angina pectoris occur in heart diseases without coronary sclerosis. Attacks may be observed in which patients complain of pain over the chest, in the left arm, paresis of the left arm and disturbances in vaso-motor regulation.

These symptoms occur in cases in which the left ventricle or the aorta is diseased. They are especially pronounced in cases of insufficiency of the aortic valves and dilatation of the arch of the aorta. Very frequently they are met with in cases of post-infectious myocarditis, and show themselves under these conditions principally in paretic conditions of the left arm, occurring after fatigue.

A description of the symptoms would be only a repetition of the above-described phenomena. A better insight into the conditions alluded to may be gained by the study of the history of the following cases: A typical example of anginoid pain, caused by fatty heart, may be found in the following history: Mrs. B., thirty-four years old; very obese, complains of shortness of breath and great weakness after slight exertion. Her heart is slightly enlarged to the right. Its tones sound very distant. Over the apex the first sound is prolonged, otherwise no signs of insufficiency of the heart can be demonstrated. She suffers from attacks caused by exertion or excitement or by overeating. They consist of more or less distressing pain over the region of the praecordium, radiating to the neck and to the left arm. The pain causes a sense of constriction complicated by a sensation of fear. At the same time she feels as if somebody grasped her neck and choked her. Palpitations occur in some attacks, but they are by no means a constant symptom. During attacks the inside of the left arm becomes anaesthetic and the fingers feel very numb. After the attack has lasted for some time, the arm becomes very weak so that she cannot perform any work with it. Duration of the attacks varies from a few hours to one or two days.

On examination hyperaesthetic areas are found, one corresponding to the third and fourth cervical segment, and a second one to the eighth cervical and first dorsal. Symptoms of motor irritation in the first zone explain the very pronounced sensation of choking. The objectivity of the hyperaesthesia is demonstrated by the occurrence of the goose-skin reflex and the dilatation of the pupils.

Under appropriate treatment, these symptoms, and with them the hyperaesthesia, disappeared.

The following case illustrates the anginoid symptoms in mitral stenosis: The patient, twenty-one years old, complained for the first time of heart symptoms about two years ago, after an attack of pleurisy. Dyspnoea on lying down and palpitations on exertion were complained of. There is a constant sense of pressure over the heart like a weight compressing the thorax. At times the pain becomes sharper, and shoots down the left arm into the third and fourth fingers, while in the chest there is a sensation of a hand grasping the heart. Sometimes the left arm becomes paralyzed during such an attack, and the patient is unable to perform any work with her left hand. These attacks come most frequently after some undue effort, especially if patient has been running upstairs. Sometimes the paralysis comes on without pain. Here, too, the relation of excessive muscular work to the attack is apparent. The attack always begins with cyanosis of both hands. On examination the signs

of a double mitral affection are found. There is typical hyperaesthesia over the third and fourth dorsal and the first dorsal and eighth cervical segment.

Similar symptoms I have seen in a great many affections of the heart, especially in the cases of aortic disease. In all these, the typical hyperaesthesias could be made out. The subjective symptoms and the irradiation of the pain corresponded to the extension of hyperaesthesia.

The pathogenesis of these symptoms found in heart disease extending over certain spinal segments and affecting the motor, sensory and vasomotor areas supplied by these nervous centers, has already been discussed, as far as the sensory symptoms go, by Mackenzie and Head. Mackenzie's conception of the phenomenon seems to me to explain best the symptoms discussed in this paper. He thinks that by the disease of the heart a constant stimulus irritates the nervous system of the heart—the sympathetic nerve. This constant irritation of the sympathetic nerve leads to an irritation of the spinal segment, at which the heart fibres connect with the spinal cord. The irritation of the sensory part of the spine leads to a sensation, which, according to the law of Muller, is projected into the periphery supplied by the nerves of the spinal segment: the irritation of the sensory part may become so strong that the cells get overtired, and are incapable of conducting the stimulus-producing anaesthesia. Similar conditions prevail for the motor part of the spinal chord. Irritation of the spinal segment leads to tonic or clonic contraction of the muscles, receiving their innervation from this spinal segment. Long-lasting irritation may lead to paralysis. Similar conditions prevail for the vasomotor disturbances. The innervation of the vasomotor processes has been definitely shown to be of the same segmental character as motor or sensory innervation.

According to our conception of the symptoms of angina pectoris, these originate in every case of heart affection, especially if the left ventricle is diseased. They are caused by the constant irritation of the corresponding spinal segments, through the sympathetic nervous system innervating the heart.

Differentiation of the symptoms of angina pectoris due to coronary sclerosis, and those occurring in other pathological conditions of the heart, is, at times, very difficult, as there exists only a difference in intensity, not in character. The lesion interfering most with the lesion of the heart, coronary sclerosis, is apt to lead to the most accentuated symptoms—to the classical attack of angina pectoris.

Prolonged observation of the patient in regard to the causative factor of the attacks, their duration, intensity of the pain, etc., will, in the great majority of cases, permit a differentiation and allow us to give a correct prognosis.

COOPER COLLEGE SCIENCE CLUB.

Dr. Schmoll, presenting case of infectious meningomyelitis:

The case which I have the honor to demonstrate tonight has been a very interesting one to me on account of a very unusual spinal lesion presenting considerable difficulties in diagnosis. The patient is thirty-two years old. There is nothing in his family or past history which would shed any light on the present condition except that he had a chancre about ten years ago, but without any secondary symptoms. I may mention here that examination does not show any symptoms of syphilis, so that it remains doubtful whether the patient ever had syphilitic infection or not. The present sickness began about three months ago with pain in his back, getting worse when he walked downstairs, and especially if he made a misstep. This pain would occur no matter on which leg he would step. At the time he was a patient in our clinic at Cooper College, and as no objective sign could be found, his case was diagnosed as one of muscular rheumatism. Slowly the pain progressed, extending from the right lumbar region across his abdomen and then crossing the middle line, finally encircling the whole body at the height of the umbilicus. About five or six weeks ago patient began to notice that he had a numbness in his left leg extending over the region of the first and second lumbar segments, and over the anterior aspect of his leg down to the knee. About three or four weeks ago numbness was noticed in his right leg and finally after another week patient began to notice his legs getting weaker, and a few days ago he was completely paralyzed. At the same time paralysis of the bladder and rectum occurred, patient being unable either to void urine or pass feces. Patient entered the hospital three days ago for examination in very much the same condition in which you see him tonight. We have, as you see, a complete paralysis of the right leg, no movement whatsoever being obtained. On the left side every movement is possible but is very weak. We find especially a weakness of the abductors and adductors of the leg; rotation of the left leg is almost impossible against the slightest resistance. A very interesting condition obtains in the muscles of the abdomen, as the abdominal wall below the naval is absolutely paralyzed, while the muscles above the umbilicus contract normally. If the patient tries to sit up without helping himself with the hands, the lower part of the abdomen protrudes, while the naval is drawn upwards towards the sternum. Examination of the sensory symptoms does not reveal any constant changes. There is a slight hyperesthesia, and slight hypoesthesia over both legs and a relative thermo-analgesia over the left leg, while the sense of heat and cold are normal in the right leg. There is a zone of hyperesthesia especially on the right side above the zone of paralysis. Examination of the reflexes shows that we have on both sides distinct Babinski, distinct Oppenheim, no ankle clonus; Achilles and kneejerks are present but feeble. The plantar reflex is present as well as the cremasteric, while the lower abdominal reflex is constantly absent. The upper abdominal reflex is mostly absent but can be obtained occasionally. Rectal examination shows that the sphincter contracts around the finger; otherwise normal condition. In the upper part of the body we find absolutely no symptoms and no eye symptoms. In the urine there is a good deal of pus found, and small amount of albumin corresponding to the amount of pus. Patient has had during the first three or four days temperature ranging up to about 103°, leukocytes of about 15,000. Fever has disappeared since yesterday and with it began a marked improvement in the condition, so that the motility of the left leg today is very much better than it was yesterday. The diagnosis of this condition is in the distinction between

the localization and pathological nature of the process. The localization is given by the extent of the paralysis and the hyperesthesia present, and points to the region between the ninth and tenth dorsal segments. The development of the process points to its beginning with an irritation of the posterior roots of the ninth dorsal segment, causing neuralgia. There the lesion progressed slowly and led to an irritation of the motor roots at the same height, showed itself in a spasm of the abdominal muscles, which I have forgotten to mention but which was present as a very annoying symptom for the last two months. Then the process began to involve the right side of the spine, showing itself by a lesion caused in the sensory part of the spine by the paresthesia occurring in the left leg. From then the lesion progressed very rapidly, leading to a complete paralysis of the right leg, caused by movement of the motor part of the right half of the spine. Signs of the less severe involvement of the left side showed themselves by paresthesias in the right leg and paresis of the left. At present we have the signs of a more or less pronounced Brown-Sequard lesion of the spine, involving principally the right side of the spine and beginning from the region of the sensory motor roots and involving, to a minor degree, the left side of the spine. As far as the pathological nature of the process is concerned there are four possibilities. First, tumor of the spine; second, localized syphilitic lesion; third, meningomyelitis; and fourth, involvement of the spine secondary to a vertebral lesion. We can exclude the vertebral lesion on account of the free motility of the spine. We see that the patient can bend over. That if we lift the patient by the legs his lumbar vertebrae bend normally. For these reasons we exclude vertebral lesion and conclude that we have to treat with a spinal lesion itself. As far as the tumor is concerned the development has been too rapid. Spinal tumors usually take years to develop and usually cause a very much greater amount of pain than we had in this case. The diagnosis of syphilitic lesion remains open, as we have no sure signs of a syphilitic infection. A meningomyelitis is quite within the range of possibilities and the fact that the patient began to improve when his fever came down speaks for an infectious process as the cause of his present sickness. Sure differentiation between these two possibilities will only be possible after the therapeutic test to which we are going to put the patient, that is, a strict antisyphilitic treatment.

Note—At the time of publication patient had improved very rapidly, even before his syphilitic treatment was started in. After about two weeks his paralysis had completely disappeared, he had again control of his bladder and rectum and the only remnant of his past affection was a slight weakness of his legs, double sided Babinski, and a paralysis of the lower part of his right abdominal muscles. It seems to me that this course justifies a diagnosis of infectious meningomyelitis and that his case can be put on a parallel with the case recently published by Krause and Oppenheim.

Dr. Stillman, discussing the case presented by Dr. Schmoll: I cannot but concur with the differential diagnosis so far as tuberculosis is concerned. I am certain that this man has no tubercular or other inflammatory condition of the spine. I consider that if the symptoms do not improve rapidly an exploratory operation would be decidedly in order. Cases of transverse myelitis are so hopeless that the additional inconvenience and trouble caused by exploratory operation should not be taken into consideration, and I think exploratory operations should be made more often. As to the localization of the lesion in this case the symptoms certainly point to the dorsal region, and as the doctor has said, it seems to be just at the tenth segment. Still if I were to operate I should expect to expose at least four inches of the cord in order to be able to examine that whole region. There seems to me to be no sense in making a small opening.

Dr. Donald Smith then reported a case of brachial neuritis (of the perineuritic or interstitial type), occurring four years after infection by gonorrhea.

Female, 28 years. Married, manicure. The family history as far as could be learned was negative. Has had the usual diseases of childhood except diphtheria. About four years ago was infected by gonorrhea, followed by the usual treatment when local symptoms subsided. One month later had an acute inflammation of the peritoneum with complete recovery. This attack was followed by two other attacks, the last occurring two years ago. Was told by a physician at some subsequent time that there was present on the right side a pus tube. The patient's menstrual history is as follows: She began to menstruate at the age of 17 years and was regular. Flowed from six to ten days and has always been very painful during the entire period. The flow was excessive during two or three days. Since the infection by gonorrhea has had on several occasions a discharge of pus from the uterus, which had no connection with the menstrual period.

The present trouble began about April 1, 1907, when patient first noticed some soreness and stiffness confined to the neck and shoulder of the left side. This became gradually worse, until about one week later, when the patient awoke one morning and could not raise the left arm without causing severe pain in the shoulder and arm of the same side. A few days later pain became apparent in the elbow and forearm of the same side. She then consulted a physician who placed her under the influence of morphin, gr. ½, daily for three weeks, with no result. Also given electricity with no result, the condition becoming gradually worse. The patient then consulted Dr. Waldeyer, to whom I am indebted for the following notes on her condition and treatment at that time, as well as the notes upon the subsequent operation.

(Dr. Waldeyer's notes): "When seen by me the patient complained of severe pain in the left neck, shoulder and upper extremity. Pain was spontaneous and increased upon active and passive motion."

When seen in consultation with Dr. Waldeyer on May 1, 1907, the patient presented the following status: Well nourished and of dark complexion. Sleep normal except when disturbed by pain. Appetite good. Has not lost weight. Feels perfectly well except for pain, and paresis of left hand. Bowels fairly regular and normal. Station normal. All reflexes exaggerated (reflexes of the left arm not being tested on account of pain produced). Cranial nerves normal. Swelling in the supraclavicular space on the left side. The muscles of the left neck, shoulder and upper extremity do not show atrophy. There was present slight paresis of the left upper extremity. The muscles of the left side of neck, shoulder and upper extremity are tender upon pressure and there is also spontaneous pain present in the same region. The pain is increased upon motion. The circumflex, median and ulner nerves are extremely tender along the entire course. The musculo-spiral nerve is tender over its posterior portion. Pressure in the axillary space causes extreme pain radiating in all directions. There is present over the entire area hyperesthesia and hyperalgesia. There is pain upon pressure over the fith, sixth and seventh spinous processes. Examination of the thoracic and abdominal viscus failed to show any abnormalities. The pelvic contents examined by Dr. Waldeyer presented the following: "Uterus slightly enlarged and retroflexed. Tender mass in left fornix. A smear showed a few intracellular diplococci. A diagnosis of salpingitis was made and

brachial neuritis with involvement of the spinal roots forming same and, in the absence of other possible causal factors, it was decided to clear up, by operative procedure, all local conditions in the pelvis and genito urinary tract. It being impossible for the patient to enter the hospital at that time it was decided to fixate the arm and administer salicylates. This was done for about four weeks without any improvement whatever. On the contrary the condition became gradually worse and the pain as well as the parasthesia extended to the right upper extremity and both lower extremities, never, however, becoming as marked as in the left upper extremity.

The patient came to operation on May 28th. The following notes by Dr. Waldeyer: "Median incision made through the rectus. Uterus and left tube very firmly bound down by strong adhesions. Tube ligated and removed with ovary. Peritoneum and fascia closed with silk. Silver wire, subcuticular for skin. Patient made a very quick and uneventful recovery."

Following the operation the arm was still painful and massage was used in the form of effleurage, never to the extent of causing pain, and gradually increased as rapidly as the pain would allow, until deep petrasauge was possible. This was continued as long as the patient remained in the hospital, about three or four weeks. With this, wet packs were applied to the arm and changed every twelve hours. The pain gradually decreased during this time and at discharge from the hospital there was present a dull ache, especially about the shoulder. The patient was treated twice a week for this with the sinusoidal and weak galvanic current, and eventually reported a complete cessation of all pain. There has been no return up to present date.

In view of the above case the following questions present themselves:

Was the neuritic condition caused, directly or indirectly, by the gonorrheal infection?

If so, was the operation advisable? and,

What tissues may be involved and to what extent by gonorrheal infection, both in the male and in the female?

Dr. Rigdon, discussing paper read by Dr. Smith:

Gonorrhea is the cause of so many general disturbances, so many affections remote from the point of infection, that the more we study the disease the more convinced we become that if, in most cases, according to the common acceptation, it is a local disorder it may yet in a respectable minority of instances be classed as constitutional. It seems clearly established that many general disturbances which were formerly thought accidental, in reality are caused by substances absorbed from the local inflammation. Among the remote manifestations of gonorrhea may be mentioned an inflammatory affection of the eye—not the ordinary gonorrheal opthalmia with which we are so familiar, but an inflammation of the deeper tissues of the anterior wall of the eye arising from infection carried through the general circulation.

I have had no experience with gonorrhea of the spinal nerves, such as reported by the doctor tonight, or at least I have not recognized such cases, but if from a local gonorrhea a poison may be absorbed which, circulating in the blood, may attack tendons, joints, pericardium, etc., I can see nothing inherently impossible in the nerves being occasionally the seat of attack, thus giving rise to a form of gonorrheal neuritis. Perhaps more careful observations with this possibility in mind may result in such cases being reported.

The question was asked as to the advisability of operating upon such cases as the one presented tonight. My judgment would be that in the present state of our knowledge of gonorrheal neuritis we would scarcely be justified by the nervous symptoms alone in deciding upon an operation for the removal of a Fallopian tube or an ovary; if local tubal or ovarian symptoms were present these might be sufficient to induce a decision to operate. In other words, our decision would be based upon general surgical considerations.

Dr. Stillman: My only feeling in this matter is that neuritis with gonorrhea does not occur frequently enough to have a casual relationship. Gonorrhea itself is so very frequent and its complications and sequalae so numerous and well understood that it seems we should have more often observed the association of the two affections. I do not remember to have read of any form of neuritis attributed to gonorrhea, but it is an interesting subject and an interesting suggestion.

Dr. Barkan: In addition to what Dr. Rigdon has mentioned about ophthalmic affections following gonorrhea, I will say that the attention of the eye surgeons has been called, in the last decade, to the fact that iritis will develop in a large per cent. of the cases after gonorrhea, especially when not in the acute stages, but with relapse and simultaneously with gonorrheal affections of the joint. In other words, we have found that there is such a thing as gonorrheal iritis. It is not the gonorrhea transferred from the urethra, but the uveal tract invaded through the channel of circulation. The eye has a perfectly normal appearance, which is rather peculiar in clinical symptoms. There is not much swelling of the stroma. It looks more like a variety of rheumatic iritis, an iritis inclined to show rheumatic pains around the head.

SAN FRANCISCO COUNTY.

Officers, 1908.

President.....Chas. G. Levison
First Vice-President.....A. J. Lartigau
Second Vice-President.....G. B. Somers
Secretary.....Arthur A. O'Neill
Assistant Secretary.....Milton B. Lennon
Treasurer.....Emmet Rixford
Librarian.....A. J. Lartigau

Directors, 1908.

Barbat, J. Henry	Levison, C. G.
Brown, P. K.	Moffitt, H. C.
Brunn, Harold	O'Neill, Arthur A.
Carpenter, F. B.	Ophuls, W.
Gibbons, Morton R.	Porter, R. L.
Gunn, Herbert	Reynolds, H. R.
Hunkin, S. J.	Ryfkogel, H. A. L.
Huntington, T. W.	Rixford, Emmet
Jones, P. M.	Somers, G. B.
Kerr, W. W.	Tait, D.
Lartigau, A. J.	

Committee on Admissions.

Gibbons, M. R., Chairman.

Thorne, Walton	Brunn, H.
Terry, W. I.	Blake, W. F.

Executive Committee.

Frankenheimer, J. B., Chairman.

Bush, C.	Lennon, M. B.

Finance Committee.

Huntington, T. W., Chairman.

Sherman, H. M.	Gibbons, H., Jr.

Committee on Medical Ethics.

Tait, D., Chairman.

Ebright, G. E.	Jones, P. M.
Carpenter, F. B.	Ophuls, Wm.

Committee on Public Health.

Moffitt, H. C., Chairman.

Gallwey, John	Watkins, J. T.
Brown, P. K.	Weeks, A.

Committee on Library and Publication.

Hewlett, A. W., Chairman.
Moffitt, H. C. Silverberg, M.

Milk Commission.

Spalding, A. B., Chairman.
Porter, R. L. Mace, L. S.
Brown, A. Blum, S.

RESOLUTIONS ADOPTED BY THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

To the President and Board of Directors of the County Medical Society, San Francisco.

Gentlemen:

I request that you present to the Society, for discussion and a vote, the following resolution:

Whereas, It is the sense of this Society that the improved status of the profession in the State of California is due to the increased stringency of both matriculation and professional examination, and in view of the fact that the elevation of the standards and their maintenance is in no small measure attributable to the untiring efforts of Dr. Dudley Tait, be it

Resolved, That the Society has heard with great regret that the present members of the Board of Examiners of California have seen fit to terminate Dr. Tait's official connection with said Board; be it further

Resolved, That such action was a mistake and a reflection upon the organized profession of California; and that this Society does congratulate Dr. Tait on the efficiency of his service and the consistent honesty of purpose and unselfish devotion to the interests of the profession exhibited by him during the whole course of his connection with the State Board of Examiners; Be it further

Resolved, That a copy of this resolution be mailed to all County Societies and to the House of Delegates of the State Society with the request for action.

Yours very truly,

E. SCHMOLL.

RESOLUTIONS ENDORSED BY THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Whereas, The American Medical Association has established a Council on Pharmacy and Chemistry, composed of scientists of world-wide reputation and standing, whose function is to examine pharmaceutical products in order to be able to inform the profession as to the actual composition of said products; and,

Whereas, After careful examination of many hundreds of said products, it has officially announced its approval of a large number of them, and, in order to make clear to the profession the methods and purposes of their work, have published exposures of a large number of the fraudulent preparations that have been foisted on the members of the profession and, through them, on the public, by interested owners and manufacturers, frequently laymen, ignorant of the use of drugs, except their meretricious use, as examples of the much larger number which they have found of little or no value, or positively harmful; and,

Whereas, We believe that every physician in Kentucky is vitally interested in the work of this Council, and desires in every possible way to promote its usefulness and interest; and,

Whereas, The greatest aid to the nostrum manufacturers, in their nefarious and avaricious work, has been the medical press, whether controlled by medical organizations, individual members of the profession or interested lay-firms; and,

Whereas, We believe the time has arrived when the great profession of medicine, and all agencies controlled by it, should divorce itself permanently, finally and forever from those interests which, like ghouls, prey upon the sick and afflicted through the commercial sale of nostrums and dishonest, so-called proprietary, medicines; now, therefore, be it

Resolved, By the Kentucky State Medical Association, in annual session assembled, that we heartily endorse the formation of the Council on Pharmacy and Chemistry, that we extend it our confidence and congratulations on the splendid work already accomplished, and that we pledge it our unanimous support in its purpose of freeing our profession, and its publications, from nostrum control; and be it further

Resolved, That, in pursuance of this object, we request each county society in Kentucky to devote a special session to consideration of this important question with a view to securing the active aid of every licensed practitioner in the State, and that the Council of this Association be requested to omit from the advertising columns of our Journal all pharmaceutical preparations, which are not manufactured in conformity with the United States Pharmacopeia or the National Formulary, until they have been approved by the Council on Pharmacy and Chemistry of the American Medical Association; and, be it further

Resolved, That we request every physician in Kentucky to secure a copy of the abridged United States Pharmacopeia and Formulary, and be guided by this and the approval of the Council on Pharmacy in their use of medicines, and, be it further

Resolved, That our Council be directed to communicate with the editors, owners, collaborators and publishers of the medical journals of this country on this subject, and to announce to the profession of Kentucky, through the columns of our Journal, such publications as are willing to assist the profession by freeing their columns of nostrum advertising, and we hereby pledge our support to such journals, even if they find it necessary to increase their subscription rate; and further, be it

Resolved, That we expressly condemn the publication of so-called medical journals by interested manufacturers of nostrums, and request the profession of the State to decline to receive them.

NEW AND NON-OFFICIAL REMEDIES CONTINUED FROM JANUARY.

ORTHOFORM-NEW HYDROCHLORIDE.

Orthoform-new hydrochloride $C_8H_9O_3N.HCl$, is the hydrochloride of meta-amido para-oxybenzoic methyl ester.

Actions and Uses.—The actions, uses and dosage of this compound are similar to those of orthoform-new, which see. Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

OVOFERRIN.

Ovoferrin is a solution containing 5 per cent. of an artificial proteid-product in which iron is present in the so-called "organic" or "masked" form (a form which does not give the iron-test directly). The solution also contains 10 per cent. of alcohol and some aromatics.

Actions and Uses.—Ovoferrin is not appreciably affected by the gastric juice, a 0.5 per cent. solution of hydrochloric acid liberating its iron very slowly and incompletely. The product ranks with the other forms of artificially masked iron, which are devoid of the local action of the soluble inorganic iron salts, and, according to some authorities, are more readily absorbed and utilized. Dosage.—8 to 16 Cc. (2 to 4 fluidrams) corresponding to from 0.03 to 0.06 Gm. (½ to 1 grain) three times a day. Manufactured by Barnes & Hille, Philadelphia.

The following articles were added to the list of New and Non-Official Remedies, approved by the Council on Pharmacy and Chemistry:

Guaiacol Carbonate Comp. (H. K. Mulford Co.)
Neuro-Lecithin. (Abbott Alkaloidal Co.)
Lecithol. (Armour & Co.)

H. M. C. TABLETS.

A correspondent writes:

"The January number of our Journal has just reached me, and I am very glad to note that you have referred so emphatically to the 'H. M. C.' tablets. I have heard of several babies born dead after the tablets had been used during confinement, but of course cannot be sure that the anesthetic was the cause. I believe hyoscin and morphin must be used with great care, if at all, in obstetric work, and I suspect that this free advertising of that combination by the Abbott Company is doing and will do much harm. Chloroform, used correctly, seems to me an almost ideal anesthetic for this work, as it is always under control, while anything given hypodermically is immediately beyond control and can not be called back. Furthermore, this applies very strongly to the fact that one is throwing into the fetal circulation extremely powerful chemicals without knowing what the result will be."

CONTRACT PRACTICE.

To the Editor of the State Journal:

Considerable has been said recently about the old line insurance companies cutting the examination fee from $5.00 to $3.00. In San Joaquin county recently a circular letter was sent to every member asking them to send the Secretary a list of all the insurance companies they examined for, also stating the fee paid, as an effort was to be made to make them restore the old rate.

That action was commendable and will, no doubt, bring good results; but there is a greater menace to our fee bill than this and far more demoralizing to the profession, to wit: Contract practice for lodges. Think of a doctor joining a lodge and signing a contract to do, not only the members' practice, but that of his entire family, for the pitiful sum of two dollars a year, if he live within seven miles of the lodge room!

Could anything be more demoralizing? Could a physician possessing any professional pride submit to such indignity? And yet the lodge doctor will say, "If I don't do it some other doctor will."

For the same reason would he perform an abortion and secure the fee, because if he did not some other doctor would?

If a new doctor comes in and goes to cutting the fees for the sake of getting practice, the profession sneer at him and rate him a cheap doctor, and yet nothing is quite so cheap as the lodge doctor who does the whole family practice for two dollars a year. The insurance examination at one dollar would not be low enough to be in the same class. If the medical profession expect to maintain the respectability to which they are entitled they will take steps at once to suppress this great menace to the fee bill.

S. W. HOPKINS, M. D.

TRAINING IN MEDICAL ORGANIZATION.

The students of the University of Pennsylvania Medical School have formed an organization the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the state organizations and elect members to a house of delegates which transacts all the business of the association. An annual meeting is held at which papers are read by chosen members, thus encouraging original research and a scientific spirit. The organization is named the Undergraduate Medical Association of the University of Pennsylvania, and already has over two hundred and fifty members.

COUNTY SOCIETIES.

BUTTE COUNTY.

The regular monthly meeting of the Butte County Medical Society was held in Chico the evening of December 13th at the office of Dr. N. T. Enloe. The following members were present: O. Hawkins of Biggs, L. L. Thompson of Gridley, C. L. Browning, O. Stansbury, N. T. Enloe, E. F. Gatchell of Chico, and Dr. Wullschlager of the United States Army as a visitor.

The following officers were elected for the ensuing year: President, Dr. L. Q. Thompson of Gridley; vice-president, Dr. C. L. Browning of Chico; secretary and treasurer, Ella F. Gatchell of Chico; member of board of census, N. T. Enloe of Chico.

Drs. C. L. Browning of Chico, E. Kusel of Oroville, O. Hawkins of Biggs and L. Q. Thompson of Gridley were appointed a committee to confer with the local boards of health in the respective towns relative to the pure food and drug laws.

An able paper was presented by Dr. W. H. Banks on "Diabetes," in which he stated fully the different suppositions relative to the disease. The subject was still further discussed by Dr. Stansbury and other members. It was voted to hold the next meeting at Oroville in January.

ELLA F. GATCHELL, Secretary.

SAN JOAQUIN COUNTY.

The annual meeting of the San Joaquin County Medical Society was held Dec. 30, 1907, at the office of Dr. R. R. Hammond, with the following attendance: Drs. M. Goodman, J. D. Young, S. W. R. Langdon, S. F. Priestly, H. E. Sanderson, E. L. Blackmun, B. F. Walker, J. J. Tully, E. A. Arthur, R. R. Hammond, W. W. Fitzgerald, I. S. Zeimer, C. L. Six, Hudson Smythe, H. C. Petersen, A. W. Hoisholt, J. P. Hull, F. R. Clarke, R. B. Knight, H. N. Cross and C. R. Harry.

A communication to Dr. W. W. Fitzgerald was received from the New York Life Insurance Co. relative to the fee for medical examination in life insurance. It was moved and seconded that the Secretary reply to the same and inform the company that the society did not permit any of its members to make an examination for less than $5.00.

This being the annual meeting, the election of

officers for the ensuing year took place with the following result:

President—E. A. Arthur.
First Vice-President—J. P. Hull.
Second Vice-President—Mary C. Taylor.
Secretary and Treasurer—B. F. Walker.
Delegates to State Society—R. R. Hammond and J. P. Hull.
Alternates—A. W. Hoisholt and H. E. Sanderson.
Committee on Admissions—M. Goodman, M. Smyth, R. R. Hammond, C. R. Harry and F. R. Clarke.
Committee on Ethics—A. W. Hoisholt, J. D. Young, J. P. Hull, W. W. Fitzgerald and H. Smythe.
Committee on Finance—S. E. Latta, J. J. Tully, H. E. Sanderson.
Trustees—J. G. Thompson, H. W. Taggart and D. F. Ray.

Dr. Langdon withdrew from the presidential nomination and Dr. Harry withdrew the name of Dr. B. J. Powell, nominee for Secretary and Treasurer, because of the absence of the doctor from the city.

No further business appearing the society adjourned.

R. B. KNIGHT, Sec'y Pro Tem.

SANTA BARBARA COUNTY.

At the annual business meeting of the Santa Barbara County Medical Society the following members were present: Drs. Barry, R. Brown, Dial, Conrad, Hindley, Morrey, Newman, Rowell and Stoddard.

Under the head of Papers and Discussions, the Society listened to an important paper by the retiring president, Dr. C. S. Stoddard, entitled "Medical Ethics." He was followed by Dr. Rexwall Brown on "Lodge Practice."

At the close of the regular program the Society proceeded to the election of new officers for the year 1908, with the following result: William T. Barry, M. D., president, Santa Barbara; W. A. Rowell, M. D., vice-president, Goleta; L. B. Coblentz, M. D., first vice-president at large, Santa Maria; R. W. Hill, M. D., second vice-president at large, Carpinteria; David A. Conrad, M. D., secretary-treasurer, Santa Barbara. The following delegate and alternate were elected for two years: William T. Barry, M. D., delegate, and Rexwall Brown, M. D. alternate.

SANTA CLARA COUNTY.

San Jose, Cal., Dec. 21, 1907.

The annual meeting of this society was held on December 18th, with forty-two members present. Besides the election of officers, those present listened to a very interesting paper presented by Dr. A. E. Osborne of Santa Clara. The result of the election was as follows: President, Dr. P. A. Jordan of San Jose; first vice-president, Dr. W. S. Van Dalsem of San Jose; second vice-president, W. F. Snow of Stanford University; third vice-president, W. W. Tourtillott of Morgan Hill; secretary, K. C. Park of San Jose (re elected); treasurer, J. F. Burns of San Jose (re elected); councillors, Drs. Simpson, Brown and Jayet of San Jose; delegate, Dr. Simpson of San Jose; alternate delegate, Dr. Wright of San Jose.

K. C. PARK, Secretary.

SONOMA COUNTY.

Sonoma County Medical Society met in Judge Seawell's courtroom. The new officers are: Dr. J. H. McLeod, president; W. J. Kerr, vice-president; G. W. Mallory, secretary; Lizzie Lain, Treasurer. The out-of-town doctors present were: Dr. J. R. Swisher, John C. Condit, Healdsburg; W. J. Kerr and R. A. Miller of Sebastopol.

Dr. Swisher gave an interesting talk on our 1907 work. It made us feel that we had made much progress during the year. He was followed by the incoming president, Dr. J. H. McLeod, who gave us the reason why we should make our society attractive. Then followed Dr. F. O. Pryor's paper, "Observations and Experiences in Post-graduate Work." He related his experience in New York and Baltimore, of 1907, a most interesting paper to us all. Then we adjourned to the Occidental Hotel, where Dr. J. H. McLeod had prepared an excellent banquet, and while at the festive board, Dr. R. A. Miller, of Sebastopol, gave us his experience in the treatment of five cases of tetanus in which three patients recovered. His treatment was by the bromides and iodides. We adjourned to meet in Petaluma, February 13, 1908.

G. W. MALLORY, Secretary.

PUBLICATIONS.

The Principles and Practices of Dermatology. By Wm. Allen Pusey. D. Appleton & Co., New York and London.

William Allen Pusey's book on the Principles and Practice of Dermatology is the most recent large text book published on the subject. The author has carefully described all rare cutaneous conditions, and his article on general cutaneous therapeutics is quite complete. A great deal has been taken from the standard books of Crocker, MacLeod, and Stelwagon.

The subject of electrical therapeutics is unusually interesting, particularly in relation to high frequency currents. The author claims that the high frequency currents are not of any more value than the ordinary brush discharge from a static machine. This seems to be a very narrow view as the action of high frequency currents is that of stimulation without discomfort, and this method of treatment is exceedingly satisfactory in various forms of localized pruritis, erythematosis, lupus, and some keratoses.

Dr. Pusey is an authority on radiotherapy, as he has probably done more work on this subject than any other dermatologist. His article on this subject is short but complete, and all people interested in this subject should consult it.

The subject on etiology of syphilis is interesting, but Dr. Pusey does not state that the spirocheta pallida is the specific organism. It seems pretty well accepted by all workers in bacteriology that at last the cause of syphilis is known, and it is unfortunate that a recent standard text book should not take this stand. The photomicrographs of spirocheta pallida are very poor. The references are very incomplete, but these were probably omitted to keep down the size of the book.

Tropical diseases are carefully considered. The great number of excellent photographs increase the value of the book. Besides many collected from other authors, Dr. Pusey has used many of his own. A few of these are poor, and should be omitted.

The article on sycosis is apt to be misleading to the student. The terms simple and common sycosis are used. This is unfortunate as sycosis has already been christened true, idiopathic, coccogenic, and vulgaris, to distinguish it from sycosis barbae. The latter is real barber's itch, a condition produced by the ring worm fungus.

There is plenty of library space for this book, as it is complete, up-to-date, easy to read, and the great number of photographs add to its value.

H. M.

The Physiology of Alimentation. By Dr. Martin H. Fischer, Professor of Pathology in the Oakland College of Medicine. John Wiley & Sons, New York, 1907.

This volume of 322 pages has been written primarily for those who are interested in physiology as a science contributory to medicine. The important and fundamental researches of the past five years have been dealt with very satisfactorily. Special attention has been paid to Cannon's work on the movements of the digestive tract, to the theory of fermentation, especially its reversability, to the structure and cleavage products of the proteid molecule, to the role of osmosis and other physical factors in absorption and secretion, and to the properties of secretin, enterokinase, and erepsin.

It is but natural that a work written largely from the standpoint of physiology should fail to take account of certain important observations made by clinicians. For example, the statement that bacteria make up 1.13 per cent by weight of the dried faeces has been shown to be erroneous; for Strasburger's method demonstrates that they make up from 10 to 30 per cent. It is also worthy of mention that Pawlow's observations on dogs have been confirmed on man by Bickel and others. In addition, Bickel has shown that the so-called appetite gastric juice, which is secreted during the chewing and swallowing of food, is due mainly to reflexes of taste and smell. Some unjustifiable statements are made concerning the effect of an acidity upon gastric digestion. Although the acidity of the gastric contents seems normally to furnish the stimulus that leads to the opening of the pylorus, it is not proper to assume that a lack of acid will cause a retention of food in the stomach. On the contrary, we know that patients with achylia gastrica often have little or no food in their stomachs after an ordinary test meal, owing apparently to increased motility. Similarly too great emphasis has been laid upon the action of hydrochloric acid as a preventive of gastric fermentation. An absence of acid may damage the body through allowing more bacteria and more undigested food to enter the intestines, but it does not cause gastric fermentation. The determining factor here is stasis; for fermentation occurs in either acid or anacid stomachs, provided they do not empty properly.

As a whole, the book is exceedingly interesting and can be heartily recommended to those physicians who desire a readable account of the recent contributions made by physiology and physiological chemistry to our knowledge of alimentation.

Heart Disease and Blood Pressure. By Louis Faugeres Bishop, A. M., M. D. Second edition. E. B. Treat & Co., New York, 1907.

This small volume of 120 pages attracts by its title, but unfortunately the text is disappointing. No blood-pressure measurements are recorded. The book is made up of a series of clinical impressions combined with more or less questionable theoretical considerations.

The Sexual Instinct; Its Uses and Dangers as Affecting Heredity and Morals. By James F. Scott, M. D. Second Edition. New York, E. B. Treat & Co., 1908. Price, $2.00.

The author is eminently enthusiastic and it is unfortunate that this excess of enthusiasm leads him into paths of verbosity and tiresome reiteration of truths which, while perchance being almost axiomatic, are none the less very, very far from aiding in any practical solution of the "social evil." The enthusiasts of this sort may possibly effect results in the course of ten or twenty generations, but the lack of practicality about their work makes the failure of immediate betterment a foregone conclusion. Nevertheless, fathers, mothers, teachers, and particularly those having strong religious inclinations, will derive much profit and edification from the book.

The Nervous System of Jesus. By Salvarona, Associate of the American Institute of Scientific Research. Pennsylvania, Langhorne, Bucks County. Henry G. Walters, Publisher. 50 cents.

At first sight of this title the religious may be offended in anticipation of irreverent treatment of an exalted subject; the scientific may expect an incursion into the field of "pathography" in the manner of the late Professor Moebius. But the indignation of the former would be allayed, and the curiosity of the latter disappointed, by reading this publication. For it is a farrago of generally unintelligible prose and lamentable verse. The author has somehow possessed himself of some of the vocabulary and the data of psychology and physiology, and has employed them most incoherently. The very feebleness of the performance disarms criticism. We refrain from quoting from the book in support of this judgment, as we have no desire to hold its author up to ridicule.

DEATH OF DR. ARTHUR E. GRESHAM.

Dr. Arthur E. Gresham of Long Beach, Calif, died of pneumonia on Dec. 30th, 1907, at the age of 42 years. He was born of English parents in Granada, West Indies. When 15 years of age he went to England to receive his education at Dulworth College, West London, and later his medical training in Dr. Bartholemew's College Hospital (University of London). He came to the U. S. in 1884 in company with his brother, the late Dr. Frederic C. Gresham of Sierra Madre, Calif., and entered Cooper Medical College in San Francisco, from which he graduated in 1885. He began practice in Los Angeles soon after, and for five years met with merited success, but his health then failed and a year later he reentered practice at Sierra Madre as successor to his brother, who had died there, where for 12 years he was much sought after as a physician and surgeon and greatly beloved by the people. He removed to Long Beach in February, 1906, where he had become well established at the time of his death and held the respect of the public and the medical profession. He leaves a wife, one son and one daughter. His body was cremated at Los Angeles.

REGISTER CHANGES—

Those members who desire to keep their Registers corrected up to date should check this list carefully. In the following will be found all the official changes (in California) received from the 15th to the 15th.

Alexander, E. W., from 1296 Ninth ave., San Francisco, to Europe.

Austin, M. O., from 2534 Mission st., to Anglo Bldg., Sixteenth and Mission sts., San Francisco.

Berger, A., from 2325 Lombard st., to 951 Guerrero st., San Francisco.

Boone, Reunette E., from Sebastopol to Santa Rosa, Sonoma Co.

Bruguiere, P. S., from Reno, Nev., to Montgomery and Commercial sts., San Francisco.

Byron, A. E., from Sonoma, Sonoma Co., to Point Richmond, Contra Costa Co.

Carey, Henry B., from Affiliated Colleges to 1296A Ninth ave., San Francisco.

Cave, Frederick P., from 5309 S. Main st., Los Angeles, to Modesto, Stanislaus Co.

Chadwick, Fred C., from 218 Eighteenth ave., to 1054 Devisadero st., San Francisco.

Chamberlin, Chester U., from Healdsburg, Sonoma Co., to Los Gatos, Santa Clara Co.

Condit, J. Christy, from Windsor to Healdsburg, Sonoma Co.

Dice, S. D., from "Hotel Hollywood" to 136 Orange ave., Hollywood, Los Angeles Co.

Dickie, Walter M., from 2670 Green st., San Francisco, to O. T. Johnson Bldg., Los Angeles.

Edmundson, W. J., from El Verano, Sonoma Co., to Ukiah, Mendocino Co.

Ellis, Jas. A., Citizens' Bank Bldg., Alameda.

Freeman, C. H., from Lincoln, Placer Co., to Berkeley, Alameda Co.

Higbee, Annie Carveth, from Tropico to Whittier, Los Angeles Co.

Howard, Katherine I., from 1600 Fell st., to 2526 Ocean Boulevard, San Francisco.

Johnson, A. W., from 1060 Ellis st., to 710 Fourteenth st., San Francisco.

La Brie, Edmond, from Lincoln, Placer Co., to Fourth and K sts., Sacramento.

Majors, Ergo A., from Soledad, Monterey Co., to Delger Block, Oakland.

Martin, Robt. S., from 1617 Page st., to 1760 Haight st., San Francisco.

Nixon, Anne W., from 516 East Seventh st., Sterling, Ill., to ——

Oliver, Joseph A., from Cooper College to 1825 Turk st., San Francisco.

Pryor, F. O., from Fulton to Santa Rosa, Sonoma Co.

Rajotte, Fabre E. C., from 1005 K st., Sacramento, to Lincoln, Placer Co.

Richardson, W. W., from Bradbury to Lissner Bldg., Los Angeles.

Rothschild, Max, from 902 Devisadero st., to Voorhies Bldg., cor. Van Ness and Fern aves., San Francisco.

Rowley, Q. J., from Downey to Grosse Bldg., Los Angeles.

Seamell, J. W., from 2825 Pine st., San Francisco, to Windsor, Sonoma Co.

Scheuer, G. A. J., from Sonoma to Guerneville, Sonoma Co.

Taylor, A. W., from Santa Barbara to Nordhoff, Ventura Co.

Wheeler, J. S., from Penryn to Roseville, Placer Co.

Wilson, Frank P., from 2855 Scott st., San Francisco, to Alameda.

New Members.

Los Angeles County—**Anton, F. L.; Allen, Chas. Lewis,** San Fernando Bldg., Los Angeles; **Gwaltney, S.; Speer, G. G.**

San Diego County—**Clark, V. G.,** Granger Blk., San Diego; **Loos, H. Clifford,** 726 Fifty-fifth st., San Diego; **Thompson, H. A.,** 1364 Union st., San Diego.

San Francisco County—**Ismardi, Mario C.,** 1404 Stockton st.

Santa Barbara County—**Hindley, G. J. D.,** 1308 State st., Santa Barbara.

New Names.

Alameda County—Goldman, Samuel A., 2024 Cedar st., Berkeley, Coll. of P. & S., S. F., Cal. '07 (c) '07; Whitlock, Robt. G., 2537 Fulton st., Berkeley, Cooper Med. Coll., S. F., Cal. '07 (c) '07.

Humboldt County—Wing, Lawrence, Eureka Cooper Med. Coll., S. F., Cal., '07 (c) '07.

Kern County—Taylor, H. N., Pioneer, Bellevue Hosp. Med. Coll., N. Y., '98 (c) '07.

Los Angeles County—Brown, H. V., 2121 East Fourth st., Los Angeles. Bennett Coll. of Eclec. Med., Oll., '02 (c) '07; Campbell, Mathew N., Glendale. Queen's Coll., Belfast, Ireland, '04 (c) '07. Charlesworth, Geo. J., Elmonte, Univ. Trin. Coll., Can., '85 (c) '88; Cooke, J. L., 109 S. Hill st., Los Angeles, Univ. of So. Cal. L. A., Cal., '05 (c) '07; Elliott, Carroll C., Soldiers' Home, Univ. of So. Cal., L. A., Cal., '07 (c) '07; Francis, Wm. Vare Chalmers, 3853 S. Main st., Los Angeles, The Westminster Hosp. Coll., London, Eng., '00 (c) '07; Harrod, R. W., 521 So. Olive st., Los Angeles, Bellevue Hosp. Med. Coll., N. Y., '04 (c) '07; Kenyon, F P., Pomona, Detroit Med. Coll., Mich., '76 (c) '07; Loverin, Geo. S., 55 W. Euclid ave., Pasadena, Jefferson Med. Coll., Pa., '07 (c) '07; McArthur, Duncan D., 959 S. Figueroa st., Los Angeles, Univ. of So. Cal., L. A., Cal., '07 (c) '07; McBurney, M. R., 614 E. 21st st., Los Angeles, Hahn. Med. Coll. of Phil., Pa. '99 (c) '07; Martin M. Lee, Santa Fe Hospital, Los Angeles, Univ. of So. Cal., L. A., Cal., '07 (c) '07; Montgomery, C. H., 747 So. Bonnie Brae, Los Angeles, Univ. of Toronto, Can, '02 (c) '07; Nice, D. D., 807 E. Adams st., Los Angeles, Coll. of P. & S., Keokuk, Iowa, '90 (c) '07; Ryan, Lee M., County Hosp., Los Angeles, Rush Med. Coll., Ill., '07 (c) '07; Smiley, W. C., 860 N. Lake ave., Pasadena, Univ. of So. Cal., L. A., Cal., '06 (c) '07; Trevalyn, Geo. H., 943 Potter Park, Los Angeles, Univ. of So. Cal., Los Angeles, '07 (c) '07; Winter, A. H., 519 Wilcox Bldg., Los Angeles, Univ. of So. Cal., L. A., Cal., '06 (c) '07.

Sacramento County—Musante, A. S., 23d and P sts., Sacramento, Cooper Med. Coll., S. F., Cal., '07 (c) '07; Sexton, L. L., Sacramento, Univ. of Cal., S. F., Cal., '07 (c) '07.

San Diego County—Winship, W. A., care of Dr. R. S. Williamson, Albatross and Wash., San Diego, Univ. Coll. Hosp. of London, Eng., '85 (c) '07.

San Francisco County—Lane, Paul H., 2344 Sutter st., San Francisco, Cooper Med. Coll., S. F., Cal., '07 (c) '07; Palmer, C. B., 1836 Pine st., San Francisco, Cooper Med. Coll., S. F., Cal., '06 (c) '07; Whitnew, Jas. L., 2620 Laguna st., San Francisco, Harvard Univ. Med. Coll., Mass., '05 (c) '07.

Santa Clara County—Clark, John A., 193 5th st., Gilroy, Univ. of Cal., S. F., Cal., '07 (c) '07.

Solano County—Turner, Harry W., Mare Island Navy Yard, Univ. of Pa., '06 (c) '07.

Address Unknown.

Mitchell, Chas. O., Amity, Prowers Co., Colo., Univ. of Colo., '07 (c) '07; Smith, Stephen H., Las Encinas, Cal., Univ. of Mich., '05 (c) '07; **Sweitzer, S. E.,** 343 Andrus Bldg., Minneapolis., Univ of Minn., '01 (c) '07.

Reinstated.

Boeseke, Elmer J., Santa Barbara.

Withdrawn.

Crabb, James N., Chico.
Wall, W. B., Santa Ana.

Deaths.

San Francisco County—**McDonald, T. P.,** 1128 Sutter st., San Francisco; **Riley, Wm. C.,** 1796 Post st., San Francisco.

Sonoma County—Cole, Wm. G., Guerneville; Ottmer, Henry C., Healdsburg; Pierce, Joseph G., Sebastopol.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -
2210 Jackson Street, San Francisco.

Telephone, West 5975.

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI MARCH., 1908. No. 3

EDITORIAL NOTES.

Notice!

Remember, the State Society meets at Coronado, April 21-23. Reserve your accommodations now, if you know you are going to attend, for the hotel may be well filled, as the fleet is expected to be at San Diego about April 15, and it may be later. The hotel people will do all they can to accommodate us, but it will help them very much if you make your reservation early.

On Monday, April 20th, the Public Health Association will have its meeting, and we understand that this will be particularly attractive. Do not fail to go to the Coronado meeting. There is no more beautiful spot on the Pacific Coast. The hotel is comfortable and the table of the best. Special rates have been made, including meals, of $3.00 per day for one in a room without bath; $5.00 for two in a room without bath; $1.00 per day additional for room with bath. The railroads will give the usual rates of one fare and a third for the round trip, on the receipt-certificate plan. The receipt-certificate must be obtained when the going ticket is purchased and must be signed by the secretary at the meeting; the full fare is paid going, and one-third fare on the return ticket. The program will be unusually good and will be so arranged that all may attend every session, and also have an opportunity to enjoy some of the many beauties of the ideal spot. It is especially important that every secretary of our county societies should attend this meeting. Do not fail to be there.

STATE SOCIETY

Certain things are happening in certain places which are sufficiently important to demand thought. Epidemics of small pox have occurred in a number of parts of the United States, very recently, and here and there are causing a considerable amount of anxiety. Communities which, forty years ago, were ravaged by the disease and have since enjoyed a period of immunity, are again attacked and seem to be committing as many blunders as they did forty years ago. Vaccination has been generally neglected, even in such states as have—like California—a compulsory vaccination law. Nor is our own state so entirely free from any possible danger. Small pox has existed in this state, endemically and in a rather mild form, for many years. Of late, however, it has been on the increase; and the type has become much more severe. This upward wave of a disease so horrible in its ravages and so easily prevented, should excite, not our alarm but our great care and activity in its prompt estoppage. Every health officer and every health board should watch carefully the situation and make every effort to enforce the compulsory vaccination law; and each one of us should preach the gospel of vaccination to his patients. It is quite natural that people should become thoughtless and careless about this, for when an epidemic appears every one is vaccinated, the disease finally runs its course through those who are not so guarded or through those who will suc-

SMALL POX.

cumb, and then, the population being pretty thoroughly immunized, it disappears for a long period of years until carelessness has again created a favorable soil. We are having enough troubles in this state at the present time; let us head off this one, as we very surely can.

PURE MILK.

Will we ever have a reasonably pure milk supply? Is it another case of commercial activity *vs.* the survival of the fittest and human inertia? Time will show. Certainly the active work of the Pure Food Commission of the State Society is doing something to improve conditions in some parts of the state—notably in the south—and the more recent activity of the California Club and County Medical Society in San Francisco seems to promise some improvement in that section in the future. But, human nature is not changing very fast. We are mighty careful about the elusive dollar, but we show a most magnificent disregard for public health. If any new sort of bug, or pest, or worm, or scale, or fungus comes along that is likely to destroy some orange, or apple or peach trees, or grape vines, or to give the oysters the bellyache, we at once become alarmed and move heaven and earth to stamp out the disease that menaces—our dollars. But do we spend the same amount of activity and money in trying to put away that which menaces our health? That seems almost a foolish question, for the negative answer everybody knows. Will we continue to be active in attacking filthy dairies and endeavoring to secure reasonably pure milk? The Lord knows it is to be devoutly hoped that we will! The Pure Food Commission promises to have an exhibition at Coronado that will be of the greatest interest to all of us, and which should lend an impetus to the work sufficient to more than carry it through the coming year with increased energy. Every one of us who is interested in this campaign—and who is not?—should make it a point to attend the coming meeting of the State Society and study carefully the facts which will be set before us by the commission. It is a fearsome task to awake the public to an intelligent interest in anything of this sort to which, or rather to the abuses of which, they have become so habituated, but perchance it may be done, and the possibility is well worth the effort. Let us all help a little.

OSTEOPATHIC OPINIONS.

There are times when one must admit that language seems to be "intended to conceal our thoughts," if even inadvertently. In a recent issue was an editorial note quoting the opinion of an osteopathic publication, to the effect that the examination of our Board of Medical Examiners was decidedly fair and just. The editorial intended to convey a mild rebuke to some members of the regular school who criticized the examination adversely, the point being that these same regulars, we believe, claim that the teaching in their schools is far superior to the teaching in osteopathic schools. We are here dealing only with the opinions on either side and not with the facts, whatever they may be. In brief, some regulars kicked at an examination which the osteopaths considered above reproach. It was somewhat amusing. Yet now comes a follower of the osteopathic methods (whose letter see elsewhere in this issue) who misread our editorial and thought that a slur was cast upon the teaching of his principles. We gladly assure him that such was not the case, and give space to his rather interesting communication.

ONE BOARD OR THREE?

It is by no means the intention of the JOURNAL to enter into a controversy with our osteopathic friend as to the relative merits of regular medicine, osteopathy or any other form or manner of attempting to alleviate the sick or distressed. The old question of one examining board or many is, however, brought up and a few words on the subject may not be amiss. Granted at once that any form of examination to determine the fitness of a physician to practice medicine, is crude; but so long as preliminary educational requirements remain, as in some sections, so absolutely mythical; and so long as the educational work in some various and sundry "medical" schools is as fictional as we know it to be at the present time, there seems to be no safe method of dealing with applicants to practice the healing art and protect the public from ignorance and incompetency, save by the actual examination. The theory on which the "one board" laws are constructed—and we say "laws" for the reason that several states have now adopted this plan—is simple. It is merely the assumption that if any individual shows a satisfactory knowledge of those branches on which any form of the healing art is, or should be, founded, if he knows the manner in which the human being is put together and the processes that go on within his body in health and disease so that he may accurately diagnose conditions which present themselves to him, he can safely be trusted to use such means to correct the patient's ills as may seem best to him. He will know enough to do no harm through ignorance, no matter what system or school of practice he may elect to follow. That this fundamental principle is sound is shown by the fact that it has been adopted by several states and that a number of others are now trying to enact new laws along the same lines. The arguments in support of multiple boards, one for each system or school of the healing art, are too well known to call for repetition, and they do not in any way answer the demand that all persons, no matter what particular method they may wish to follow in so doing, must show a certain minimum of fundamental knowledge before being permitted to practice upon the sick, the injured or the physically afflicted.

BUSINESS METHODS.

Systematic work and careful, exact business methods are not in the slightest degree incompatible with professionalism in its most refined form. Rather is the contrary true. The man who thoroughly systematizes his work, who is niggardly of his time, who arranges his schedule of appointments carefully and sees to it that his most valuable possession—his time—is not stolen by inconsiderate patients, finds himself able to do more things, to read more, to study more and to play more, than the man without system in his work, who finds the day gone, his energies dissipated, with many things left undone and with no inclination to study or play. So with business methods. The physician who carries the accounts of his patients in his head will very soon find that ready cash is scarce, the accounts are few, the balances due him but trifling, and not much else in the head to disturb the quiet of the few accounts. Old saws are none the less true though hackneyed, and "short accounts *do* make long friends." The grateful patient will pay his bill at the end of the month with no feeling of resentment; but at the end of a year, when the services for which the bill is rendered have long since been forgotten, he will, nine times out of ten, feel that he is being abused. All persons should pay according to their means, and they will pay if they find that they receive from the physician the same business consideration which they receive from the merchant. A careful revision of your business methods is well worthy of your attention, and if they are not systematic and up to date, you will find it greatly to your profit to see that they are made so.

BUSINESS BUREAU.

This subject of the business side of medicine is one to which we have all given far too little consideration, yet we find if we look about us with seeing eyes, that almost without exception, the successful physicians of the country are men who exercise as much system in the business side of their work as they do in the economy of their time in their professional work. McCormack, in his addresses, has suggested a very good plan and it seems to be meeting with favor in several parts of the country. If the physicians in any county will combine their forces, organize a central business office, employ a collector for all, turn over their accounts to him every month, and allow him to do the collecting, they will soon find out who are the "dead beats," and they will have their accounts collected much more promptly and satisfactorily. In Chicago, the medical society has organized such a business office in the University Building, Lake and Dearborn streets, and it proposes to accept physicians' accounts for collection at rates not exceeding those charged by regular collecting agencies. Surely if such an undertaking can be successful in Chicago, it can be so in other places as well and the small society can conduct its affairs and the business of its members in this labor-saving fashion quite as well as can the large one. Why not discuss such a scheme at your next meeting and see whether it may not be easily adapted to your own local conditions?

"H. M. C." TABLETS.

The editorial note in the January issue of the JOURNAL has called forth several letters on the subject, which we have not space to print. The communications seem to be about equally divided between commendation and condemnation. The facts in the case are simple and should not be mistaken no matter what unfounded statements may be made by interested parties. It is conceded by almost every person the world over, who is competent to judge and express an opinion, that scopolamin and hyoscin are identical, chemically, physically and hence physiologically. It is also conceded that this chemical combined with morphin has a definite, though strictly limited, range of usefulness and that the combination must be used with great care and with thought for the idiosyncracy of the patient. There is no reason to believe that "cactin" is other than an inert substance and every reason to believe that it adds nothing to the value or usefulness, and *detracts nothing from the danger,* of the combination. The *promiscuous* use of this combination is a grave danger and one which every physician should fully appreciate; if he does realize it, the danger is reduced to the minimum. It is useless for a man to say that he has used it twenty-five times with no injurious result. The professional abortionist does not meet with a fatality once out of every twenty-five times that he does his dirty work; yet no one will deny the danger of his occupation nor the fact that the abortionist does kill a certain number of women. Nor will any one competent to take a broad general view of any question, doubt for an instant that drugs as powerful as scopolamin or hyoscin and morphin, must have a certain number of untoward results if indiscriminately used. It is as obvious as that two and two make four.

SAN FRANCISCO AND THE PLAGUE SITUATION.

A careful survey of the situation in San Francisco presents to the observer certain facts and conditions the knowledge of which comes with a distinct shock. The present campaign may be divided into two clearly marked objectives. The first, of course, is the killing off of rats and in the prosecution of this work we note that the city is spending some $12,000, the Federal Government some $40,000 monthly; to this amount is to be added a sum obtained by subscription from citizens which is now being collected and will closely approximate a half million of dollars. This is a simple phase of the work and may be dismissed at once, as it is obvious that it is a work of an unusual nature and due entirely to the peculiarities of the particular disease in question.

The second element of the work, however, is an entirely different matter. It consists in getting into operation the disrupted or unmoving machines which collectively make up the municipal factory of city government. It may be said, *a priori,* that had all the departments and branches of the city government been in full operation, performing the duties which they are supposed to discharge regularly and completely, the present anomalous general excitement in San Francisco would not exist; for there would be no need for it and the danger from plague, no matter what the rat infection, would be and would have been an absurd minimum. What we actually see in the activities of the Citizens' Health Committee is the remarkable spectacle of a group of private citizens *appealing* to other private citizens, not to do anything unusual or strange, but merely *to obey the laws and ordinances relating to public health.* The same group of citizens *appealing* to the various departments of the city government, the Board of Health, the Police, the Board of Works, not to do any extraordinary thing, but merely to perform the duties and *do the work they are supposed and required to do under the city charter.* Can you imagine anything more grotesquely absurd than the spectacle of this group of citizens *asking* each other to obey the laws, and *asking* the departments of the city government to kindly perform the duties for which these departments were created and intended?

A word as to the form of the city government will not be amiss. The Mayor is the one city official who is directly responsible to the citizens for the government of the city. He appoints the various boards and commissions for the supervision of the work in its various forms, as health, police, fire, works, education, civil service, etc., but all of these commissioners are responsible to the Mayor, and he has the power to remove them if they do not perform properly their several duties. All of the labor to be employed by these various boards must come to them through the Civil Service Commission, presided over by Mr. Cornelius, president of the defunct Carmen's Union. All of the improvements which the city so sorely needs must come through the Board of Works, which board will have the spending of some thirty-odd millions of dollars, and is presided over by Mr. Michael Casey, president of the Teamsters' Union. The Board of Supervisors can only pass laws, ordinances and franchises and appropriate money for specific purposes. Mr. Mayor, many things seem to be distinctly "up to you."

If the boards and commissions appointed by the Mayor, and for all of which he is responsible, were doing what they are supposed to do, where would be the necessity for private citizens to neglect their work and *ask* the Board of Health and the Police Department to look for and abate the innumerable sanitary nuisances which exist? And for the same private citizens, or representatives of the Federal Government, to devote their time to making inspections of stables, restaurants, markets, slaughter houses, etc., and themselves make formal complaint of nuisances, and then be compelled to devote more time to the work of seeing that something is actually done toward abating them? Or wherein would be the necessity for the same private citizens going to the police force and explaining that, under the charter, the police force is the force of sanitary inspectors of the city; and then *ask* the police to do a little inspecting—that for which they exist? Mr. Mayor, how about it?

And, furthermore, should it be the duty of private citizens to *request* the Board of Works to see that broken sewers are repaired? Or investigate the reason for putting in a bill of several hundreds of dollars for sprinkling the streets during a month when it rained every day? When private citizens find that the city is paying $3.00 and $3.50 a day for ordinary labor and the prevailing rate is $2.00, is it impertinent, Mr. Mayor, to ask you *why the provision of the charter covering this point is not enforced?* Is it the duty of private citizens to *ask* for a specific accounting for $40,000 "spent on the sewers," or, Mr. Mayor, is it your duty to see that your Board of Public Works makes this accounting as a matter of course? What have these things to do with plague? Merely this: If the various departments of the city government did their full duty—and you are responsible for them all—the citizens who entrusted the conduct of their civic affairs to you would not have to devote a great deal of their time to seeing that the necessary work of your appointees is properly performed; nor would they have to contribute a half million of their dollars to remedying what has been brought about, very largely, by neglect of duty.

It is natural to wonder what the Citizens' Health Committee is going to do with the tremendous force of popular approval that it has aroused and which is behind it. Will all this energy be idly dissipated in merely killing rats, asking the various city departments to do their work and for a time seeing to it, at the expense of much valuable time and labor, that the work is done? Or will this committee of private citizens which has, in a way almost wonderful, roused the entire community and secured the support of the whole city, devote its remarkable energies to the work of pointing out inefficiency and incompetence, of throwing such a flood of light upon the rusty, rotten and disused machinery of the city government that every citizen will see things as they really exist and will demand that responsibility be placed where it properly belongs, that public officials do their work and do it honestly—or go out? It is a most interesting problem. A careful study has shown that there are enough ordinances to keep the city clean and make it practically impossible for plague to be or become an element of danger, if they are rigidly and continuously enforced.

Will it not be cheaper, in the long run, for the business men who are now devoting their time and their energies to the work of sanitation, and of rat killing, to employ the machinery of public approval, which they have won, in the work of compelling an active and competent administration of the city's

affairs and thus secure some lasting benefit from their present arduous toil?

THE AWAKENING OF PUBLIC INTEREST IN SANITATION.*

By WILLIAM FREEMAN SNOW, A. M., M. D., Associate Professor of Hygiene, Leland Stanford Junior University.

Hygiene and sanitation are, as yet, vague terms in the vocabulary of the public, but they are terms which are used with rapidly increasing frequency. The logical development of these terms will restrict hygiene to the individual and sanitation to his surroundings. Many subdivisions and special interpretations will become established, but I have chosen for the present purpose to use sanitation, as inclusive of everything pertaining to the public health—both hygienic and sanitary.

Knowledge of conditions favoring the preservation of health has been accumulating since the beginning of recorded history, but the systematic application of this knowledge to the health improvement of large groups of individuals is only now beginning. In the first development of homes and occupations, the personal element was necessarily paramount in the protection of health, as well as in all other matters, but with the transformation of frontier villages into crowded cities the efforts of the individual to carry out a hygienic regimen have become dependent upon community activity in providing modern sanitary facilities. The unsanitary Indian tepee is of little concern to the distant ranchhouse; and the squaw weaving at her simple loom has only to move outside the door in order to obtain unlimited sunshine and fresh air whenever the interior becomes ill-ventilated, dark or otherwise unhygienic, but when the tepee and the loom are multiplied into the city tenement and the modern weaving mill, general legislation on such matters becomes imperative.

On every hand there is evidence that the public is realizing the necessity for the diffusion of accurate knowledge among the people on the various problems of sanitation and personal hygiene. The tenement house commissions, the pure food and dairy associations, the anti-tuberculosis leagues, the various public health organizations—these and many others are actively engaged in carrying on investigations and distributing publications in the interest of improved sanitary facilities; while other organizations—the physical education associations, the Nation Children's Playground Association, International Society for School Hygiene, the Mothers' Congress, the Society for Moral and Sanitary Prophylaxis, the national welfare work movement, and the like—have for their purpose the enlisting of public interest in the betterment of the personal health of children and employes.

Dr. Dixon in the oration on State Medicine at the recent meeting of the American Medical Association said:

[1] The advances which have been made in Pennsylvania (in public health) have undoubtedly had their counterpart all over the land, although not in so striking a degree. Everywhere the people, and therefore the legislatures, which are but the reflection of the people, are waking up to the vast importance of official sanitary work. It is beginning to be seen that preventive medicine is of as serious import for the welfare of humanity as remedial medicine; and remedial medicine is finding her resources enlarged and her scope broadened by the addition to her armamentarium of biologic products, the first search for which was inspired by the desire to produce prophylactics against contagious diseases.

"It is a frequent remark that in a representative government, health laws can not go far in advance of the intelligence of the people, all of whom, illiterate as well as educated, foolish as well as wise, have the right to suffrage.

"If we aim, in the language of Dr. Parks, to render growth more perfect, decay less rapid, and life more vigorous, in civilized life, we must give up many primitive or individual liberties to insure advanced civilized liberties and to permit a free social and commercial intercourse. It is not too much to say that on state medicine depends the happiness of our people and the success of our nation. It is not enough to possess an intimate knowledge of general laws; we must know how to practically apply these laws. And, more than that, we must possess sufficient self-control both individually and collectively, to be willing to submit to the enforcement of the legal enactments designed for their application."

We must have laws. "These laws must reach into all the relations of human life. It is idle to prate enforcement of sanitary laws as an infringement of personal liberty. Submission to reasonable personal restrictions intended for the welfare of all is the very foundation stone of civilized liberty . . . "; and the voter and his legislative representative must be taught that this applies to health as well as to wealth.

"I fully believe," wrote Commissioner Porter in his annual report for New York State in 1906, "that our people would be with us heart and soul in endeavoring to clean up our beautiful lakes and rivers if they only clearly understood the great and urgent necessity for it. Here, then, let us remember the word 'Education.' In every possible way our fellow-citizens should be told of the conditions that exist, the changes that are required, the results that will follow. With a strong and educated public sentiment behind us, the progress on the high road of sanitation will be much easier and faster.

[2] "You can not make great changes in customs, you can not inaugurate great reforms, unless you have behind you a determined and intelligent public sentiment. Nor may we hope that all the important changes suggested, yes, *demanded*, by modern sanitary knowledge and skill, can be forced upon the people of this great State (New York) unless they fully understand the reasons why these changes are required, and are convinced that the reasons

* Read before the California Public Health Association, Oct. 25, 1907, Woodland, California.

given are sound. And so, if 'eternal vigilance is the price of liberty,' then everlasting education is the price of public health. Let, then, our watchword be 'Education, Education, and again Education.'

[3] "Let it be understood at the outset, however, that no matter how great efforts we may make to educate the people, unless we have the *lex scripta*, the written law, to fall back on, State Medicine, while it may be a beautiful science, can never be a practical art. The limitations of human nature forbid. In the paralyzing presence of a great epidemic people will be impressed for the moment with the necessity for sanitary restrictions and submit to them with tolerably good grace, but the moment the pressure of fear is lifted from their hearts, the majority of mankind are neither wise enough voluntarily to submit themselves to the requirements of sanitary law for the sake of preserving their own health and that of their loved ones, nor righteous enough to be willing to exercise self-denial and repress the cravings of avarice to save others from sickness, suffering and death."

Dr. Henry P. Walcott, President of the Massachusetts State Board of Health, commenting on recent health legislation, voices the same thought, using the yellow fever epidemics of Boston by way of illustration. "There is now no reason," he writes, "why any community should be terror-stricken by it (yellow fever). There *is every reason* why the community should place in the hands of somebody almost absolute power for, in the first place, taking the man who has yellow fever and so secluding him that the mischief-making insect can not come in contact with him, and so protecting the well people that the insect that is infected itself cannot come in contact with them. It is the simplest possible problem, and it justifies any amount of legal interference on behalf of the community as a whole . . . The community is now justified by ample scientific knowledge in erecting all sorts of barriers, and it does not need a man of my age to predict, certainly the youngest man here can predict it as surely as I can, that the number of diseases so treated is going to increase enormously in the future, and the powers of the commonwealth are going to be invoked to a much larger extent than they ever have been invoked."

Dr. Philip Mills Jones of our own state makes a plea in his October editorial [4] for better instruction of the voter on sanitary legislation in California. "Merely to notify the Board of Supervisors that there is certain danger somewhere or to introduce a good bill into the legislature, will do nothing. So long as legislators are ignorant of the needs of the people for health protection, or so long as they *think their constituents are ignorant* of these things, so long they will never be done. Therefore it is vitally necessary, if we (as physicians) are to fulfill our obligations to the public, that we manifest our existence by getting interested in politics so far as educating the voters on these matters may be concerned."

In the 1906 Lane Lectures [5] — now in book form—the author describes the excellent public health organization of Great Britain as resulting from the stimulus of "terrible visitations of epidemic disease which time after time spread panic and despair throughout crowded towns and cities, and often invaded rural districts."

"Modern sanitation," the author continues, "is a product of stern necessity. It is a natural consequence of the conditions of urban life." In England "cholera and typhus were the school masters, whose teaching, though expensive, was effectual," and Great Britain today has what America most needs—*trained full-time medical officers of health* and *security of tenure in office.*

One more factor must be emphasized in discussing the education of the public to the point of voting adequate sanitary laws and appropriations. It is well phrased by Dr. McVail as follows: "There is in the public mind a rooted conviction that sanitation is restricted to the prevention of infectious diseases, but that it is at the same time very effective in preventing all diseases of this class. This is in two directions a most serious mistake. On the one hand, sanitation is useful quite outside the regions of epidemic infection. The term is, of course, capable of different definitions, but in so far as it includes improved housing, air, water, and food, and greater cleanliness of person and abode, of village, town and nation, it has a good influence on all the ills that affect the human frame, and it serves to prolong life quite independently of checking the prevalence of infectious diseases. On the other hand, apart from and in addition to the measures embraced in the general term 'sanitation,' nearly every preventable disease requires its own special preventive agency or agencies, duly related to its own special causes, and where such agencies are not yet discovered, or not sufficiently employed, sanitation has not been very successful in controlling the spread of disease. Indeed, it must be admitted that some members of the group usually known as preventible have been little, if at all, diminished in prevalence by reforms in housing, water supply, drainage and the like. But the general health of the community has been much benefited by such reforms, and it is owing to a combination of diminutions, made up partly of infective and partly of non-infective maladies, that the modern death rates of civilized nations have been so greatly reduced."

It has been my purpose in quoting these extracts to show the growth in America of community rights vs. individual rights, as applied to questions of health. It is our duty as health officers to work for the prevention of *all* diseases. But to work effectively it is evident that we need (1) the active support of a public, educated in personal hygiene and general sanitation, (2) the enactment of adequate legislation covering the duties and powers of our public health departments, (3) proper facilities in our universities or medical schools for training expert assistants in vital statistics, epidemiology, public health, laboratory technique, etc., whom we may

appoint to carry out the details of direct investigations upon which all our executive actions should be based, if we are to deal effectively and fairly with the varied problems arising from day to day. The present paper had to do with only the first of these needs, namely, the education of the public.

We may say with Dr. Prince A. Morrow in his opinion [6] at the first meeting of the Society of Sanitary and Moral Prophylaxis, that for this purpose our educational institutions should be utilized. "The teaching of (hygiene) should form an integral part of the course of instruction of (students) in the highest grades of our public schools. The teaching of alcoholic physiology is made mandatory by the law in every public school in the United States; certainly a knowledge of (general hygiene) is no less important." For the students in our high schools and in our colleges and universities progressive courses in hygiene and sanitation should be added to those in biology and physiology. "It is evident, however, that education through these agencies will only reach a limited class. It should be made available to the great body of young men and young women of the working class and to the larger general public. This education must be collective and conveyed through lectures and conferences, by means of pamphlets, tracts, printed slips and other agencies for reaching the public. The medical profession can not, alone and unaided, accomplish this educative work. Physicians possess the scientific knowledge, but for the practical application of this knowledge —to disseminate it among the people, where it is most needed, and where it will be productive of good—the consent and co-operation of the public are required. In this educational propagandism much can be accomplished by the physician in his individual capacity, but his opportunities are limited. Certainly the public can never be enlightened by papers read before medical societies and through discussions in medical journals.

All these facts emphasize the need of organizing a society which shall be the medium of communication between the medical profession and the public, a center of diffusion of this enlightment. It should disseminate dignified and discrete literature containing the needed information, clothed in simple language and intelligence to the layman.

This association which I have the honor to address today and the Pure Food Commission of the California State Medical Society on behalf of which I am present, represent the nucleus of such an organization, as outlined. This association stands for frequent *personal* conferences of interested lay and professional public health workers, while the commission constitutes a permanent central bureau for the investigation, collection and dissemination of properly authorized propaganda upon all phases of practical hygiene and sanitation. If properly correlated they possess all the essentials for the directive influences which will make for rapid advance along these lines of education in California. This educational work must look toward two distinct results—(1) securing a comprehensive plan of public health administration which will adequately meet all the needs of California and (2) thorough instruction in the general principles of hygiene and sanitary science for the mothers and voters of the next generation. The latter problem is largely one for the educators in our public schools. We can assist, but it is our duty primarily to teach the voters of this generation what we want for the present. And this at once brings us to a realization that we are far from any unanimity of opinion as to what we do want. Some of us believe a national department of health with a cabinet officer, should be established, this department to have general supervision over state departments established upon a uniform basis of administration under state commissioners. Some of us believe that the government should concern itself only with our coast quarantine and other national questions of public health, and that each state should be responsible for its own problems and for adequate co-operation with neighboring states. Some of us believe that the county or the town should be the unit, and that state boards of health should have no direct power over local health matters.

Pennsylvania, New York, and Massachusetts are good examples of the application of these views. Pennsylvania has a state commissioner of health with a seat in the governor's cabinet and full financial and appointive power over the entire state. The cities still maintain their individual boards of health, but the state department has full authority to assume charge within as well as without a city whenever it may be deemed necessary by the commissioner. Pennsylvania covers an area of about 45,000 square miles, with 30 cities, 849 incorporated boroughs, 1547 townships and a total population of 7,000,000 people. The legislators realized that the commissioner who could be responsible for the health of this number of people must be a man of ability, integrity and wide experience; that he must receive a fair compensation, and that he must be provided with sufficient appropriations and laws to make his department effective. Accordingly they established an annual salary of $10,000, selected Dr. Samuel G. Dixon, president of the Philadelphia Academy of Sciences and a man of wide reputation as a sanitarian and a professor of note in the University of Pennsylvania. Dr. Dixon is a believer in the centralization of power in public health work and has taken up his work with the determination to prove the success of that plan of organization. The distinctive details of sanitary administration are in brief the appointment of local officers of health, responsible directly to the state department. These men are not necessarily physicians, in fact the great majority of them are not physicians. Their duties are those of a sanitary agent, who carries out general executive details of quarantine, sanitary inspection, abatement of nuisance, arrest of offenders, etc., under instructions from the central department. In short they constitute a body of 700 sanitary police under the direct charge of the commissioner. The individual work of these men is supervised by a system of 66 county medical inspectors, who hold

the general relation of consultant to the department. They may be called on to diagnose doubtful cases, investigate epidemics, and carry out such instructions as may be sent them. They are paid according to the amount of service rendered and are all practising physicians in some part of the districts assigned them. I have with me copies of the blanks and pamphlets of instruction issued by the department.

New York state has a commissioner of public health and provides approximately $95,000 for the maintenance of a well organized department. The commissioner's approval is required of all health officers appointed outside of incorporated cities, and this gives the state department a certain active co-operation with health officers throughout the state which is very valuable. Each sanitary district is required by law to pay the expenses of its health officers to the annual sanitary conferences of the state department. This is a very important factor in encouraging co-operation and unanimity of action in dealing with similar problems in the various sections of the state.

Massachusetts possesses a state board of health with an executive secretary, who is a paid officer. The Massachusetts board has long held a position of world-wide influence in public health matters; but as an administrative body its powers are distinctly advisory. The local town or district board of health is the unit of organization. The distinctive feature which has been provided within the past year, is the dividing of the state into fifteen districts each under the supervision of an inspector in the service of the state board. President Walcott says of the plan: "It is not the business of the inspector to exercise any autocratic authority over the local authorities now in existence in charge of health matters. It is his business to inform them if necessary. It is his business to assist them. It is his business to bring the authorities of neighboring communities into co-operation. It is his business to properly inform the authorities at the state house that there are things (in his district) which only the state authorities can deal with. He is to be the next friend of the local authorities, and exactly in that way he is going to accomplish all that it is impossible to designate by any words of a written statute. He has got to exhibit himself as an individual of knowledge, of tact, and of perseverance."

In concluding the address from which this is quoted, Dr. Walcott said: "I believe that the public health in Massachusetts, as a result of this legislation, is going to be better protected, and I believe that we are going to know more about the conditions under which our people live. I think we are going in consequence to be able to provide better conditions for them because the power of the state board of health under this new act is, after all, only an advisory power. We have the power, fortunately, and it is an enormous power, of reporting to the Legislature of Massachusetts, and I don't believe there is a single community in Massachusetts from Boston down to Gayhead which does not respect the public opinion of Massachusetts."

And so we come back to the necessity for influencing public opinion. Public health departments accomplish this in two ways: (1) through the direct influence of their official administrative work, and (2) through pamphlets, lectures and exhibits designed to awaken public interest. Public health work can not be bounded by political limitations. From a sanitary point a city or a state is as large as its contributing territory. New York receives its daily milk supply from a radius of 400 miles, and is accordingly interested in the health administration of all the states from Pennsylvania to Maine.

New York City thus has a purpose in distributing its public health literature over all New England, but in addition to such instances of direct interstate relations, health officers are realizing that the great common cause which they represent knows no boundary, creed or politics. "While giving one another freely of our best inspirations," wrote Dr. Dixon, "let us indulge in a noble rivalry to obtain each for his own state the most successful exhibit and the happiest results. So may we deserve well of the *republic!*"

It is this spirit which actuates Dr. Chapin of Providence to spend his time editing each year the new health laws of all the states, and stimulates the Rhode Island state department to publish and distribute these summaries free of cost to all those interested.

The Massachusetts sewage experiment station at Lawrence was for many years the sole center of trustworthy information, and of practical training for experts in its branch of sanitation in this country. Ohio now offers through its state board of health to examine all candidates for a certificate of efficiency in public health work. This is done in the hope that it may have a certain weight in encouraging the technical study of public health administration. New York state maintains a special cancer laboratory, and the city has for years provided an experimental laboratory under the excellent direction of Dr. Park, which has exerted a national influence. The Chicago board of health has this year thrown open its laboratories for the establishment of a practical public health course of instruction. The United States Public Health and Marine Hospital Service has been very widely helpful in solving special problems in various states. The hydrographic bureau has been equally accommodating. All these agencies make for rapid inter-state diffusion of information on public health matters.

Within the states I have found the most varied and original experiments in popular education in progress. Louisiana maintains an examining physician on its state board of health, whose real function is that of state organizer of public health institutes. The audiences at these institute meetings are large and enthusiastic. Simple talks illustrated with the lantern are the means of drawing out the local audience into discussions of their immediate problems. Annual conferences comparable to this present session are held, which are most encouraging. The Georgia state officer has organized a field laboratory for the study of the large problems of incineriasis and tuberculosis among the negroes and the factory population. The idea is excellent and might well

be followed by other states. Aside from the accurate information gained the plan has excellent educational possibilities. Dr. Batt, chief of the Pennsylvania bureau of vital statistics, established a well-planned correspondence school of public health; but could not give the necessary time to it. As a means of special training for our present officers, our state boards might profitably maintain some modification of such a plan. Baltimore appropriated $10,000 this year for advertising the health department ordinances in the street cars and on the public advertising boards of the city, and the citizens subscribed $10,000 more for carrying on a special educational campaign against tuberculosis. (It may be an interesting digression to state that the board of education would not permit the assembly rooms of the public schools to be used for lectures and exhibits on tuberculosis, ruling that such movements were not educational). The City of Washington in co-operation with the United States public health department is carrying on a most comprehensive study and educational campaign against the diffuse spread of typhoid fever. New Hampshire and Vermont, in common with many other states are holding annually, important public meetings of their health officers. New England speakers of prominence both in scientific and practical work deliver papers of interest and great value. These papers are subsequently published for distribution and constitute one of the great factors in education along these lines.

All this takes into account only the educational activities of a few of our health departments in various sections of the United States. I wish there might be time for other papers on parallel movements in our schools and colleges, in our many special associations and subcommittees of organized charities, in our pulpits and our newspapers. We will never know how much we owe of our present awakening to Collier's Weekly and the Ladies' Home Journal, the unsuccessful (?) "Jungle" and the fascinating "Battle with the Slums."

But what of California? What have we done? What should we work for? Our assets are: (1) an excellent state board of health with a most excellent and earnest secretary for whom our first duty should be to obtain security of tenure in office. This board possesses the foundation for a system of excellent laboratories—hygienic, epidemiological, pure food, vital statistics—and a well organized administrative division; but money is needed. Therefore our second duty should be to obtain adequate appropriations. Considered solely on a financial basis, California would receive a high rate of interest on an annual appropriation of $50,000 for public health work of her state board of health.

We have (2) in many of our incorporated cities efficient health departments, and in between these and the state board we have a more or less inefficient system of county health officers and deputies. I use the term inefficient advisedly. Our county officers have neither the advisory authority of the state board, nor the police powers of the city health board. They are limited by state statute in the amount of their own remuneration and by supervisorial statute in the amount they may spend in solving their problems. The marvel is that they accomplish what they do.

Then we have (3) as yet few of the serious problems of stream pollution and over-crowding, which demand in many states costly destruction or the making over of unsanitary areas before constructive legislation may be carried out. Ours are in truth problems of preventive as contrasted with remedial sanitation. Our tuberculosis problem is serious. I am glad the principal paper of the meeting is by Dr. Browning, and on this subject.

Lastly we have (4) a rapidly awakening public. Our schools are beginning to really teach hygiene as a live subject. Woodland's neighboring city of Stockton is soon going to have the enviable distinction of having been the first in California if not in the United States to utilize the powerful resources of her public schools in building up a discerning and influential class of voters on public health legislation. We have a strong State Medical Society which has manifested special interest in public health matters by establishing a pure food commission, which is in practice much broader in its activities than the name would imply, and finally we have this association.

In my opinion this California Public Health Association, composed as it is of a nucleus of faithful state, county and municipal officials around which gathers every year a varying number of representatives from every phase of commercial and industrial life, is the one organization in this state to which we may look for guidance and support in all sound advance in public health administration and education. To this organization then I address this plea for endorsement of the following suggestions. The body of my paper will be as short, as my introduction has been long.

First—Let us work for paid secretaries for our county health officers. We do not know yet that we want Pennsylvania's centralization of power, but her plan of appointing trained laymen may be used to obtain for our county officers executive assistants trained to carry out the details of his administrative orders. In populous districts a sanitary or factory inspector may well be added. I am disposed to think that Massachusetts' plan of placing the control of child labor in the health department is a wise measure.

Secondly—*Let us work for the establishment of a bureau of sanitary survey and epidemiology of the state board of health.* New York, Pennsylvania, the District of Columbia, Ohio, are this year making rapid progress with complete sanitary surveys of all their watersheds. Massachusetts through special commissions has done this in past years. Our counties can not afford to organize a permanent staff for such work in each county, there is not sufficient need for it, but collectively the counties could profitably keep field parties from the state board employed constantly. The state board has already done what its limited finances will permit in this matter, and the work should be amplified. Such a plan offers at once the opportunity for our county officers to call on the state department for prompt scientific investigations of epidemic or in-

sanitary conditions upon which to base their executive actions. It offers all the advantages to our state department which Massachusetts urges for her fifteen state medical inspectors.

Thirdly—*Let us work for better co-ordination in our public health educational work.* We should encourage this movement in the public schools. The teachers should be invited to use their local health officer as special lecturer if he can lecture, or better still, if he can not, he may be used as demonstration assistant. Any health officer in this association would be willing to take his oil-immersion microscope and some cultures to the neighboring high school and demonstrate our great infectious disease foes. The inspiration which comes to both teacher and student through such kindness well repays the physician for his time. Dr. Browning has done these things for Los Angeles County for years. Dr. Langdon is doing them for Stockton now. Among the most effective sanitary exhibits, which I saw along the Atlantic Coast this past summer, was one of milk utensils condemned by Mr. Jordan of the Boston municipal department. Every health officer is repeatedly chancing on such instructive objects of insanitary conditions. If these were collected or photographed and properly arranged in a neighboring high school museum of public health, their influence would be most valuable.

These are helps; but our great educational returns for the immediate future would come through the centralization of educational work in all the phases of public health through official representation in this association. Dr. Pottenger with his associates is striving to establish a strong anti-tuberculosis society. Dr. Fulton of the International Congress which will meet in Washington next year is asking us what we will do as a state in the way of an exhibit. Dr. Farrand the national secretary is trying to see signs of a permanent tuberculosis organization in these initial stirrings. Dr. Prince A. Morrow is hoping some strong executive will develop here a branch of the long-needed society for combatting venereal diseases. The founders of the Public Health Defense League are asking support of their effort to bring these various organizations together all over the United States. The committee of one hundred, under Dr. Fischer's guidance, is developing a powerful machine for public health education in America. We need all these movements, but they should be placed before the public in well balanced relations. Our citizens should not be permitted one month to believe that tuberculosis is the only disease requiring serious public consideration, and the next month to become panic stricken over syphilis, only to become indifferent to both in the third month.

I believe that this association could profitably establish a system of official delegates from all organizations interesting themselves in personal hygiene and sanitation in California now and in the future, and that these delegates could select an executive committee representing the various types of organizations—(1) those combatting infectious diseases, (2) those working for better housing and sanitary conditions for our poor, (3) those working for the purity of our streams, etc., (4) those working for physical training advancement, etc., (5) those working for legislative enactments, etc., the duties of which executive committee would be to co-ordinate the active work of the different associations in the various districts of the state.

The California Pure Food Commission could then be elaborated into a public health commission prepared to determine by actual investigation, or otherwise, the soundness and the authenticity of all facts or measures advocated by the various societies in their campaigns, and to provide permanent section bibliographies with a complete cross index system. These together with similar index records of educational work actually in progress would constitute the keystone of our organized efforts. These are not original ideas. They are not impractical. The National Civic Federation has tried such methods in its welfare department with marked success. The Public Health Defense League advocates similar plans, and invites the co-operation of every state in developing a national organization. It is for us to adapt the good in such movements to our own conditions.

I propose this outline for the consideration of the association not as the letter, but as the spirit of the public health organization which the California State Medical Society hopes to see developed. Should these suggestions receive general approval, I am prepared to move the appointment of a committee to seriously investigate by correspondence with existing societies and otherwise, the feasibility of such a plan, and to report at the next meeting of the association.

It has not been my purpose to suggest more than a sub-surface organization. I would regret to see any deviation from the cordial informality which has always marked these gatherings of this association. The caucusing of official delegates would be a sorry exchange for this delightful hospitality of Dr. Clark and his Woodland neighbors.

(1.) "Law, the Foundation of State Medicine." Samuel G. Dixon, Commissioner of Health of Commonwealth of Pennsylvania.
(2.) Commissioner Porter—address, 6th annual conference, Sanitary Officers of New York.
(3.) Dixon, p. 9.
(4.) California State Journal of Medicine, Vol. V, No. 10.
(5.) "The Prevention of Infectious Diseases," John C. McVail, McMillan Co., '07.
(6.) Vol. I, 1906, Transactions of the American Society of Sanitary and Moral Prophylaxis. The writer of this paper knows fro mconversations with Dr. Morrow that the alterations in quotation would be concurred in, as applying to a broader phase of the subject, than those under discussion at that time.

GASTROENTEROSTOMY, WITH A REPORT OF ELEVEN CASES.*

By W. A. CLARK, M. D., San Leandro.

It seems rather preposterous to bring the subject of gastroenterostomy before the Society with a limited number of cases to report when our masters in other sections of the country are reporting their hundreds. But the uniform good results obtained in this class of sufferers, many of whom had begun to believe that life was hardly worth living, and that in some instances we have overlooked

*Read before the Alameda County Society.

our hand, as in two of our cases reported in this paper, impels me to crave your indulgence in reporting the results of the cases which my associate, Daniel Crosby, and myself have had in this line during the past year at the Infirmary and in our private work.

The technic of the operation will not be dwelt on in this paper, as it is a subject upon which you all are undoubtedly familiar; but the symptoms leading one to advise a patient to submit to this operation are worthy of note and I believe that they will bear an extended discussion from you gentlemen this evening.

Gastroenterostomy is essentially a drainage operation and at the present time is undertaken for the relief of those distressing symptoms which are caused by gastric ulcer and cancer, contraction of the pylorus, as a result of disease or trauma, which interferes with the proper emptying of the stomach contents, hour-glass contraction, prolapse of the stomach, ulcer of the duodenum, and also contraction and kinks of the first portion of the bowel.

Chronic ulcer of the stomach and duodenum follows nutritional disturbances of a limited area of the mucosa, which results in the destruction of this circumscribed region by the gastric juice. The cause giving rise to this condition which permits the gastric juice to become a destructive agent, is not clear. It is possible that thrombosis or embolism following vascular disease may be a cause, yet it is true that in the majority of cases this condition is not present.

Hyperacidity with or without stagnation is commonly coincident with ulcer, but as a cause or an effect it is not known. Chlorosis has also been considered in the etiology of gastric ulcer.

The evidence that central or pneumogastric nerve disease is a predisposing cause is not conclusive. Trauma alone can hardly produce an ulcer, as it is a well-known fact that ulcers of the mucous membrane heal readily.

Irritation from the decomposition of retained stomach contents undoubtedly is a factor, especially when associated with bacterial infection. This infection may so reduce the resistance of the tissue cells as to render them liable to digestion by the gastric juice.

To sum up our present knowledge of the causes of gastric and duodenal ulcer, according to Billings, is that the gastric juice is the active agent in its production in a limited area, and that this occurs because of a nutritional disturbance in a circumscribed region of the mucosa. That the nutritional disturbance may be brought about by bacterial infection associated with local trauma, and that vascular disease, local areas of muscular spasm, gastric stagnation and anemia may all serve as factors in certain instances.

It is now quite generally conceded by those who are doing considerable stomach surgery, that gastric cancer has an old ulcer for a base, Graham even going so far as to say that the fourth stage of gastric ulcer is cancer. Contraction of the pylorus may be chronic or due to the thickening and contraction incident to chronic ulcer or cancer. In gastric ulcer we have, as a general rule, a long train of symptoms commonly called dyspepsia and which have existed for a considerable period with frequent intervals during which the patient has felt quite well. These symptoms in a classic case would be pain rather localized in the region of the stomach aggravated by pressure and food; hemorrhage and some evidence of motor insufficiency. Yet in the cases reported here to-night these classic symptoms are quite conspicuously absent. The majority of our patients have been complaining of indigestion for varying periods of time with intervals when the patient would feel quite well, these periods often being coincident with medical treatment as in three of our own cases. The pain, which comes on shortly after the ingestion of food, varies from a simple distress to one which is quite sharp and is only relieved by vomiting or after digestion is complete and the food has left the stomach. This condition is frequently termed neuralgia of the stomach.

The pain when characteristic is peculiar in its distribution, for it radiates from the epigastrium back to the shoulder blade and the spine. Associated with the pain and tenderness there is often vomiting of a very acid fluid and an examination of the gastric contents often shows an excess of hydrochloric acid both as to percentage and actual quantity. Constipation and diminished urine are usually present.

In other cases there may develop, with great suddenness, a profuse hematemesis, or symptoms of collapse from perforation, and one of these accidents may be the first symptom of any importance. Such was the writer's experience in a recent case in which the patient died about ten minutes after arriving at the house, and on autopsy, a perforation admitting two fingers was found in the anterior stomach wall near the pylorus. Careful questioning of the family elicited nothing but that the patient had had "dyspepsia for several years."

In other instances there is a general failure of health, emaciation and a development of profound anemia. In still others violent neuralgic pains are the chief manifestations and lead to the erroneous diagnosis of neuralgia of the stomach. In some instances the disease lasts but a few weeks; in others it is prolonged for years.

Chronic ulcer as a rule presents no other history except a gastric distress which may have existed for years. In fact, the symptoms may be entirely those of gastric dilatation or of pyloric stenosis. The patient is emaciated by reason of voluntary starvation to gain comfort, and by the loss of food by vomiting.

Hematemesis and melena, which are so frequently spoken of by many authors, have occurred in only two of our cases. The vomited blood is usually dark in color, acid in reaction and is clotted. When passed by the bowel it is tar-like in character. Occult blood may be detected in the stomach contents and in the stools from all patients who suffer from ulcer of the stomach.

Hyperchlorhydria is present in the majority of

cases of ulcer of the stomach and duodenum, but in our later cases we are not using the stomach analysis.

Duodenal ulcer is often associated with gastric ulcer and occurs in about 40 per cent of cases. We have about the same symptoms, with exception that the pain comes on some time after eating and is relieved by the ingestion of food. Ulcer of both the pylorus and duodenum may cause considerable stricture, when we then have added the symptoms of stagnation and obstruction. The ulcer is usually situated in the first four inches of the duodenum and may be just within the sphincter muscle of the pylorus itself as in one of our cases. Hematemesis seldom occurs from ulcer in this region.

Chronic ulcers of the stomach usually occupy the pyloric half of the organ and the larger number are situated on the posterior wall when we frequently obtain a Head zone to the right of the median line, and to the left if on the anterior wall. Ulcers may be of the indurated or non-indurated type, and when of the latter variety are usually not demonstrable at the time of the operation. In this type the diagnosis being confirmed by the clearing up of all the symptoms after operation.

In carcinoma of the stomach we have the same symptoms as ulcer, but in addition we have progressive anemia, cachexia, decomposing stomach contents, dilatation of the stomach, frequently the vomiting at times of material from several meals containing lactic acid, and the Oppler-Boas bacillus, and still later a palpable tumor in the pyloric region.

Gastric or duodenal ulcer or cancer is so frequently present in some cases that no difficulty is experienced in making a diagnosis. Care must be taken that the pain of appendicitis, gall-stone colic, renal colic and intense menstrual colic is not taken for that due to perforation. True gastric neuralgia is extremely rare and is not affected by food.

The severe pain in the stomach due to locomotor ataxia can be usually excluded by remembering the points of that disease.

Gall-stone colic may be misleading, but it should be remembered that here the taking of food has no influence on the pain.

Chronic ulcer and cancer may present much the same symptoms, such as pain and obstruction at the pylorus and consequent dilatation of the stomach. Pain, obstruction, emaciation, dilatation, and lastly, a mass in the region of the pylorus, make a typical picture of cancer. The gastric contents in ulcer usually shows an excess of hydrochloric acid, while the contrary is true in cancer. In duodenal ulcer the pain comes on some time after eating and is frequently stopped by the ingestion of food, whereas in gastric ulcer the pain occurs soon after eating and is relieved by vomiting.

After excluding hemorrhage from other portions of the alimentary tract, the finding of occult blood in the stools is good evidence of a gastric or duodenal ulcer.

Ulcers near the pylorus heal more slowly than those in other locations. This is undoubtedly due to the grinding action in which this portion of the stomach partakes. It has been found that about 74 per cent of simple uncomplicated ulcers yield to medical treatment and that about 13 per cent of the remaining portion die as a result of the ulcer. It is this 26 per cent of cases which at present stomach surgery is dealing with. It is this class of cases which drift around from one doctor to another in search of relief, become neurasthenic, consult peruna, etc., correspondence doctors, and Christian Science healers, at last in desperation consult the surgeon.

Operations should be performed in all cases of primary ulcer which have not been cured by six weeks of medical treatment, and in all cases of primary ulcer which have relapsed, and all cases of chronic ulcer. The one indication for treatment of this condition enumerated, is drainage of the stomach either to remove irritating contents or simply to keep irritating material from passing over the ulcer. This result is at present best obtained by the operation of gastrojejunostomy, or as it is more familiarly known as gastroenterostomy.

The operation we have been doing is "no loop method of the Mayo's." This operation in the limited number of cases presented here is certainly all that those gentlemen claim for it.

The following histories are presented in somewhat lengthy detail to again call attention to the symptoms above enumerated, and also to show why we operated:

Mr. H., age 48, locksmith, complained of pains in the stomach. **Pains** came on about twenty minutes after eating, gradually increasing in severity, and in about a year experienced a burning sensation which created a desire for hot or cold water. **Vomiting** followed the ingestion of the water as a rule, the vomitus being at first yellow, but during the past few months was often black. **Hematemesis** was suspected from this description. **Loss of weight** was to the extent of thirty pounds in last three months. **General condition** was greatly improved at intervals of two or three months during this time. **Emaciation** at present is marked, patient feeling extremely weak. Was put upon medical treatment and left apparently cured on December 12, 1906, then returned on the 19th of December, operation being performed on the 22d, the condition found being an ulcer of the pylorus. Patient left hospital with a considerable gain in weight and a relief from all symptoms, apparently well.

Mr. McQ., age 42, laborer, complained of soreness in epigastric region. **Pains** and soreness had been present about six months, the pain being more severe during past four weeks and coming on shortly after eating. About two hours after the ingestion of food pain passes away, but the soreness continues. **Vomiting** spells have been absent. **Loss of weight** is marked. **General condition** shows patient to be very weak, constipated, and urinary flow scanty. **Emaciation** is present. **Examination** shows heart action irregular, slow, and a systolic murmur present. Epigastric region tender to pressure. At **operation**, an indurated ulcer found on anterior wall of pylorus. Patient left apparently cured, pains having ceased, and returned in three days after leaving suffering from lost compensation. Died on the 5th of February from dilatation of the heart.

Mr. P., age 45, laborer, first seen in 1904, when he complained of stomach pain after eating, of variable duration, and a dull ache always present. Stomach analysis showed food well digested, no hydrochloric acid present, but lactic acid present. Re-

ceived medical treatment and left improved, but returned in March, 1907, with a complaint of pain in the stomach, sharp in nature, coming on about one to two hours after eating, vomiting, usually voluntary, always relieving pain. Food often regurgitates. Bowels loose. Emaciation marked. At operation an enlarged sentinel gland found over greater curvature of stomach near pylorus. Since operation, patient has had no pain and feels greatly relieved.

Miss G., age —, complained of vomiting and regurgitation of food, which had existed for several years and was getting worse. Can tell when bile is present in stomach, by headache, which is immediately relieved by vomiting. There is also pain in stomach relieved by ingestion of food. Troubled with eructations of gas. No blood ever vomited. Obtains relief at times by getting on knees and bending over a couch with a pillow against abdomen. Has been losing weight for past year. Has occasional periods of comfort. Also complains of gas in bowels and at times of pain in the rectum; also pain in left shoulder. Patient rather anemic and poorly nourished, and abdomen somewhat retracted. Examination shows general enteroptosis, superior border of stomach near umbilicus, right kidney down about to brim of pelvis; left kidney is palpable. Medical treatment was instituted for a year or more without success, when operation was decided upon. Operation: Incision at border of rectus and stomach explored. What appeared to be an hour-glass stomach was a dilated duodenum with a pylorus which remained permanently open and would admit three fingers. Lower down on duodenum was found three or four bands of peritoneum which were apparently constricting the bowel and causing a dilatation of the duodenum and in turn the pylorus. Constricting bands were loosened and abdomen closed. Patient did well for a few days, when the wound became infected, necessitating removal of the sutures. Patient had a severe vomiting seizure that night and wound opened up with a prolapse of what was apparently a loop of bowel. This was replaced and the wound eventually healed, but the former symptoms were much aggravated and patient gradually grew worse. A month from time of first operation, incision was made in the medium line and it was then found that instead of bowel, a portion of the stomach had prolapsed into the wound of the former operation. A gastroenterostomy was rapidly done and the patient rallied well, but died three days later from exhaustion. No post mortem was held.

Mr. O., age 47, a painter, complained of pain for past three months in epigastric region, sharp in character, occurring from twenty to sixty minutes after eating; also during the night when it was most severe; if diet is soft and liquid the pains are lessened. Has had vomiting spells, when the pain was relieved; vomited blood three months ago, black in color. Loss of weight has been twenty pounds in last three months. Ten years ago weight was 210, but at present is about 125 pounds. Has used alcoholic liquors and tobacco to excess. Examination: Is greatly emaciated; cachectic; mucous membranes anemic; heart sounds are irregular, weak and intermittently accentuated. Abdominal palpation shows greatest point of tenderness to be five and one-half inches above the umbilicus in the median line. Head zone just to right of said point. At operation, carcinoma was found, saddle-shaped, in lesser curvature near pylorus.

Mrs. T., age 34, housewife. First seen two years ago (1904), complaining of indefinite stomach pains, eructations of gas and indigestion. After gastric lavage and analysis of stomach contents, was put on medical treatment. Was seen again in 1906, when she complained of stomach pain, more severe and sharp in character, occurring within an hour after eating, often relieved by the ingestion of food, but soon returning. Vomited blood, black in character, followed by black stools, and in three days (one day before the operation) vomited blood a second time. Is constipated, suffers from headache and vertigo and has lost a great deal of weight. Had chlorosis when eighteen years old. At operation no indurated ulcer found. Since operation patient has gained in weight, has no more pains, but headaches still continue.

Mr. R., age 65, complained of severe pain in the stomach, for past three months coming on shortly after meals. Vomited frequently, often vomiting the contents of two meals, no blood being found in the vomitus. Was very weak and had been losing weight for several months. Was anemic. At operation, carcinoma was found at the pylorus, for which pylorectomy and subsequent gastroenterostomy was performed. Died eleven days after operation.

Miss M., age 60, cook, complained of pain in the stomach, loss of weight and diarrhea. About two years ago had a severe attack of pain in the stomach region lasting about three weeks. Vomiting did not occur. One year ago pain recurred in the stomach and over the abdomen, followed in three months by vomiting spells which have continued ever since. No hematemesis. Has lost much weight. Appetite almost gone. Pain comes on mostly at night. Patient much emaciated, very anemic, tongue coated; hydrochloric acid found in stomach contents. At operation, carcinoma found on the anterior wall of pylorus.

Mr. N., age 25, laborer, complained of pain in the stomach, vomiting, indigestion, dark red stools. Present illness began four years ago with indigestion and frequent vomiting attacks, and pain in stomach. Pain had no special relation to ingestion of food. At times stools were red in color. Frequently vomits blood. No loss of weight. Patient not cachectic, tongue coated, and a slight tenderness over epigastrium. At operation an indurated ulcer found on anterior wall of pylorus.

Mr. L., age 62, farmer, complained of indigestion and loss of weight and strength. Was perfectly well up to ten years ago. Ten years ago patient began to have indigestion, continuing ever since. Vomiting began six months ago, occurring nearly every morning after breakfast; in character like coffee-grounds. Three days ago vomited blood. Pain has been present for years, but has increased greatly during last six months; always localized in the stomach region and is always greater after meals. Loss of weight is marked, thirty pounds being lost in past six months. Patient feels very weak. Bowels have tendency to diarrhea; no blood in stools. Emaciation marked. Tongue coated. Appears anemic. Blood examination shows hemoglobin 35 per cent, red cells 3,000,000, white cells 6,840. Gastric contents showed lack of hydrochloric acid, many tissue cells present, no Boas-Opler bacilli present, many yeast cells present. Operation performed on January 27, 1906, by Dr. Huntington of San Francisco. Carcinoma on anterior wall of the pylorus found. Patient died January 4, 1907.

Mrs. M., married, two children. Complained of pain in the stomach. Excellent health up to a year ago, when she had an attack of pain in the stomach after eating, which has continued ever since, except for an interval of three weeks occurring about three months ago. Has lost thirteen pounds in two months. The pain comes on about one-half hour after eating and lasts from one to three hours. Vomiting relieves the pain, and on one occasion appeared like a dark thick syrup, the stool at the same time having a similar appearance. Is very nervous and wishes to die if she cannot obtain relief. Examination shows Head zone to left of median line extending almost to anterior axillary line. No palpable tumor. Some tenderness in region of the pylorus. Operation showed a small duodenal ulcer involving the pylorus. Was entirely relieved of the symptoms, two weeks later leaving the hospital and four weeks after the operation was out of bed. At

present is gaining weight and health and has had no return of symptoms.

Looking back over the histories of the cases presented here this evening, let us see what has been gained and what has not.

One patient died without any relief three days after the gastroenterostomy, which was performed one month after another operation, with the patient in a condition of extreme exhaustion. The operation was undertaken purely with the hope of being able to do something, as it was recognized that death would take place in a very few days. There is a question that if the gastroenterostomy had been performed at first in the face of the complete relaxation of the pylorus, whether the symptoms would have been cleared up.

The patient on whom a pylorectomy and subsequent gastroenterostomy was done, died eleven days after operation from exhaustion caused by inability to swallow, and also to retain any rectal nourishment. No autopsy was obtained and can offer no solution of the trouble. For the time being he was entirely relieved of the symptoms for which the operation was undertaken.

The patient operated upon by Dr. Huntington had an extensive carcinoma of the pylorus and had one year with entire relief. Death then occurred from an old endocarditis. At autopsy no metastasis of the carcinoma was found, and also that the growth had not extended during the year. A strand of celluloid linen which had been used for the inner line of sutures was found hanging to the anastomosis.

One patient who had a bad heart lesion and who collapsed twice on the table, obtained entire relief, left the hospital against our advice and worked one day. He returned two days later with a dilatation of the heart and lost compensation, and died eight days afterwards.

All the cases except one obtained complete relief from pain, which was *the* symptom which led them to seek help and readily consent to operation.

Most of these cases have been diagnosed and operated upon solely by subjective symptoms, and although we have not demonstrated an indurated ulcer in each case when ulcer was suspected, the entire clearing up of the symptoms subsequent to gastroenterostomy gives sufficient evidence that our operative diagnosis of a mucous ulcer was correct.

In two of the patients their true condition was overlooked for three years and another patient for one year. If this has occurred in our limited experience there must be a great many more patients with ulcer of the stomach or duodenum with the ultimate probability of cancer, who are being treated for neuralgia of the stomach or heart, or indigestion, when if proper attention were paid to the characteristic symptoms they would be sent to a surgeon who would give them the benefit of this ingenious and comparatively safe operation.

Gastroenterostomy will not cure neurasthenia, but if it is dependent upon any of the conditions above enumerated, relief will be given.

Gastroenterostomy is essentially a drainage operation and if undertaken for the relief of symptoms which are induced by faulty drainage, you will make a most grateful patient, an admirer of the medical profession and not allow him to become a victim for quackery and a candidate for Christian Science.

OBSERVATIONS ON SPINAL ANALGESIA.*

By ALFRED NEWMAN, M. D., San Francisco.

Almost a decade has elapsed since the introduction of spinal analgesia to a waiting medical world, ever eager for the recognition of any discovery looking to greater comfort in operative surgery. Since the time when this form of anesthesia was first practised, much vicissitude has attended it, as indeed has been the common lot of almost every notable discovery in medicine.

To America must be accorded the credit of the first discovery of this principle, which however was allowed to lie dormant until re-discovered by a German. It was eagerly adopted by the French, and by them introduced to the entire medical world. Although not the discoverers, the French are really the promoters of spinal analgesia.

First reports regarding the new method were all favorable,—prematurely so; indeed, by many it was claimed that the ideal anesthetic had at last arrived. Then came the inevitable reaction. Accidents of a disagreeable character began to be reported, accompanied by a death-rate which compared unfavorably with that of chloroform or ether.

Threatened with oblivion, under these circumstances, modifications of the original method were suggested; the cocaine was dissolved in the spinal fluid, adrenalin was added; other drugs were substituted. Of the substitutes whose action next came under observation, two have sustained and survived extended test, and are in vogue at the present time: stovaine and tropa-cocaine. The former is a French synthetic and owes its great popularity largely to the patriotism of the French. It is named after its discoverer, Fourneau—French for "stove." But the use of this drug is on the decline. I have long since abandoned it in favor of tropacocaine, whose use has given much better satisfaction.

Concerning the latest substitute for Cocaine, Novocaine and Alypin, I have no personal experience, but up to the present time at least, reports of operators show them to be much inferior to tropacocaine. With the development of spinal anesthesia, we have passed through the cocaine, the stovaine and the tropacocaine eras, finally settling upon the last as the best drug thus far discovered. Others have arrived at the same conclusion and are abandoning all other drugs for the tropacocaine. The reason for this late recognition—Schwartz has used it since 1901 and has always praised it ("Munch Med: Woch" 1902. No. 4)—lay in the initial poor results it gave. This was largely due to the quality of the drug. Bier, after abandoning it, has returned to it. Our first

*Read before the San Francisco County Medical Society.

results with it were very disappointing, and all my failures occurred at that time.

The quality of the drug, then, is a very important factor. This has more significance with regard to tropacocaine than with cocaine or stovaine; for while there is only one preparation of the last two, both tolerably reliable, of the first there are two, a natural and a synthetic. The natural, derived from the coca tree, rich in the alkaloid, has given us and others uniformly good results; the second, uniformly poor results. As we preserve the drug dry in hermetically sealed vials, we have nothing to fear from deterioration or decomposition. This does not apply to the drug in solution, especially with the addition of adrenalin, as used abroad. Adrenalin in solution decomposes very readily, so that many disagreeable after-effects have been attributed to the use of old solutions. For example: Hermes (Sonnenberg's clinic) had 17 after effects in 117 stovainizations, without adrenalin and 17 in 95 with. Baesch, using Alypin alone, had 2 after effects in 10 cases; with adrenalin 10 in 27. Therefore, it is advisable to avoid all ready-made solutions and make your own anew for each operation, a very simple matter with the sterilized salt.

Cocaine and tropacocaine form clear solutions with the spinal fluid, but stovaine, owing to its great susceptibility to alkalies, at once becomes milky, forming an emulsion. This reaction of decomposition, however, does not interfere with its anesthetising properties.

Dosage—Cocaine I can dismiss with few words, as that has been practically abandoned. I only wish to say that in the early days I used some very large doses. It was no unusual thing to use over half a grain, and at one sitting a patient received three injections, about 1¼ grains in all, and never had a single after or accompanying effect. Later the dose never exceeded one-half grain (Compare Legueu, two deaths after 3/10 grain and ¼ grain respectively. La Presse Med. 1901. 90 Deux cas de mort immediate par rachicocain). Viollet used as much as C:08 (1 1/3 grains). Morton up to ½ grain).

The dose of stovaine is from 4 to 6 centigrammes (2/3 to 1 grain) although much larger doses have been given with impunity. (Becker as much as 0.104 —over 1½ grains). But as we never can tell who will be the susceptible patient, it is well to stay within the safety limit. As little as 1/6 grain has been reported to have caused death (Pouliqueu by Billon and Geraude).

The dose of tropacocaine is 0.05 to 0.06 (5/6 to 1 grain), although there are many exceptions to this also. I have used up to 1¼ grains, but this dose will cause considerable fall in blood pressure in old people. Franchesci, Vienna, on the other hand, uses as much as 1½ gr. (1.10) in children under 15, while adults receive as high as 15 centigrams (2 1/3 grains). This looks like an enormous dose, but as he sterlizes at a very high temperature (130°), he probably reduces its activity. Schwartz, one of the earliest and most enthusiastic advocates of tropacocaine, never exceeds 0.06 (1 grain). Bier, since his fatality with 0.13 (2 grains) places the maximum dose at 0.05 (5/6 grain). This was his first fatality in over 1000 cases, and was entirely due to the overdose. That a smaller dose can cause death is shown by Urban's case. ("Wiener Med. Woch": 1906. 51 & 52) where a 31 year-old man with double hernia received 1 gr. dissolved in 4 c.c. of liquor between the 3rd and 4th lumbar spines, and died two days later in delirium and great dyspnoea. It would seem difficult to reconcile Franchesci's huge doses with no mortality, and Urban's small doses with large mortality, for, besides the above, he had two more fatalities (one stovaine and one tropacocaine).

Sterilization—This is accomplished with dry heat. The drug having been weighed out and put in previously sterilized and thoroughly dried vials, is placed in the autoclave for 20 minutes, and subjected to a temperature of 110° to 115° Cent. The corks are then inserted and the bottles heated another 20 minutes at 100° to 105°. They are then allowed to cool and the corks are marked and sealed with paraffin. These bottles will keep for years. You can also sterilize the drug in papers, in the same manner, but of course with some sacrifice of keeping power. This amount of sterilization is amply sufficient, for tropacocaine is in itself antiseptic. A grain of it in a bouillon tube will inhibit the growth of the resistant staphylococcus pyogenes. Koslowsky uses it just as it comes from the manufacturer without any sterilization at all. (Centralbl: f. Chir: No. 45. 1902.) Franchesci, on the other hand, goes to the opposite extreme as above noted.

If there is any one element in which spinal anal gesia has been rich it is technic. One could almost say as many operators, so many varieties, and it will not be until there is one accepted method that we shall get any statistics that are really valuable. As in all other procedures, so, here, the simpler the better. A method such as used by Kronig can never become popular because of its cumbersomeness. He consumes three minutes in giving the injection, so as to produce no disturbance in pressure read off on a manometer about 1½ feet long attached to the needle and held up by a special assistant. Dark glasses to shut out visual and a pair of ear flaps to shut out auditory impressions, complete the performance. Some operators carefully avoid spilling any of the spinal fluid. Others allow it to run away freely. Some use the obturator in their needles, others do not, and so on indefinitely. My technic is now as follows:

Technic—The instruments consist of two spinal needles, diameter 1 m. m., length 7½ c. m. (about three inches), a Luer syringe holding 2 to 5 c.c. and a glass of sterile water. First clear your needles by injecting a syringeful of the water, for, if you notice, the first drops will be dirty owing to rust and particles from the inside of the needle. At the same time note that the syringe fits. Do not wait till you have your needle in the patient's spire before making the discovery. Then place the patient upright, with legs hanging over the side of

the table, have his back prepared as in a laparotomy. Others are not so particular. (Veit Stuttgart Beitr: zu Kl. Chir., Vol. 53, No. 20), simply rubbing with cotton and ether. When all is in readiness, locate the third lumbar spine; a line joining the highest points of the iliac crests will run between the third and fourth lumbar spines, with the patient bending well over. You then choose the interspace you wish to enter, bearing in mind that the cord as a rule extends down to the lower border of the body of the first lumbar vertebra. Placing the left thumb on the tip of the spinous process, define the interspace and grasping the needle in the hand like a trocar, pass it directly above the thumbnail into the back in the median line. In case of a very prominent interspinous ligament, it may be necessary to pass the needle from the side, but whenever possible, use the median route. When the needle pierces the dura, it imparts a peculiar crashing sensation to the hand; at the same time, the patient feels a sharp pain. Being in the subarachnoid space, the fluid should at once appear. If it does not, have the patient cough, as this often starts the flow by displacing some nerve that may be blocking the entrance to the needle. If this fails, pass the stylet; a shred of tissue may be caught in the lumen. If this does not avail, look to see if you have remained in the median line. The needle point may have been deflected. In that case, draw the needle out to the skin, not through the skin, change its direction, and re-insert. If then you fail, try another interspace. Should the fluid be bloody, wait until it runs clear before injecting, although I have injected bloody fluid without any untoward effects. Having obtained a free flow of fluid, let it run into the bottle containing the tropa-cocaine. Then allow varying amounts to run off, 3, 4, 6, 8, c.c., depending on the intraspinal pressure. Take the second needle, stir the drug till dissolved, draw up into syringe, insert latter into spinal needle, being careful not to spill any, an accident that very often happens to beginners, and first allowing the spinal fluid to flow back into the syringe, inject, forcibly for a higher, gently for a lower anesthesia.

Withdraw the syringe and needle, keeping the finger on the plunger to prevent regurgitation. Seal the puncture with collodion, and prepare for operation. Where the patient cannot sit up, you must puncture him lying, while, if he cannot bend his back, the puncture may become a very difficult matter. Naturally, in case of ankylosis of the spine with an ossified ligamentum subflavum, it will be impossible to reach the medullary space.

Regarding the withdrawal of spinal fluid, I had observed that when the analgesia failed, or was inadequate, the spinal fluid had been under considerable pressure.* This increased pressure apparently prevented the isotonic solution from ascending. Acting upon this idea, I withdrew various small amounts of fluid to lower pressure and increase the height of the analgesia. The few cases (five) in which I have had an opportunity of trying this, all acted splendidly, both as to anesthesia and after-effects. As is usually the case when we think we have found something original, this had been done before by Chaput and Offergeld to avoid the disagreeable after-effects; by Filliatre, both for this reason and to increase the extent of the analgesia. In the Bier clinic, they also allow the fluid to run off, and yet Bier, in his earlier publications, warned against this very practice. This goes to illustrate the constant change taking place in the technic of spinal anesthesia, in the endeavor to perfect the same. I have seen only good results from this procedure, while Filliatre, who still uses cocaine, claims to have robbed the latter of all its terrors thereby.

Indications—We have confined our operations to the region below the umbilicus, having performed a ribresection and ovariotomy and appendectomy only once (cocaine). The reason for this was the uncertainty of the anesthesia above the umbilicus and very often below the umbilicus. According to Tuffier, the method works best in operation of the bladder, hernias and lower extremities. Chaput summarizes his conclusions in 309 cases of stovaine analgesia, as follows: The method is wonderful for the lower extremities, the perineum, genitals, hernias, colostomy and appendicitis. Contra-indicated are young children, very nervous and very cachectic patients.

The prevailing opinion at present tends to conservatism, rather to contract the sphere of spinal analgesia and to confine it below the umbilicus. This is in marked contrast to the enthusiasm with which the method was practised in the early days, when Tuffier (1900) proclaimed it the great rival of general narcosis for all operations below the diaphragm.

There are certain conditions in which spinal analgesia is specially adapted—diabetes, old age, heart disease and lung disease.

By placing this limit to our sphere of operation, we get fewer failures and far greater satisfaction from the method. This and the perfection of technic will tend to render spinal analgesia reliable and rid it of the continual reproach of uncertainty, so that anyone, after little practise, will be able to get the results that now only experts get.

With one exception all operators report some failures in their series:

Chaput (1901)—Cocaine; 57 cases; 11 misses.

Lea (1902)—Cocaine; 18 cases; 5 misses.

Preindelsberger (1905)—Tropa; 260 cases; 20 misses (14 times superficial).

Hermes (1905)—Stovaine; 90 cases; 4 misses (twice on same patient).

Barker (1907)—Stovaine; 100 cases; 11 misses in first fifty.

Kurzvelly (1905)—Cocaine-Adrenalin; 53 cases; 5 misses.

* Oelsner, in reporting the experience with sp. anest. from Sonnenburg's Clinic, says that the best results were obtained in those cases in which the sp. fluid dropped from the needle, while all the failures were registered in the cases where the fluid spurted forth. They therefore allow considerable fluid to run away in such cases. Anesthetic is stovaine-Biflomborate of epirenan, 0.00013, stovaine, 0.01, Nacl, 0.0011 to the cc. This makes a solution that is about isotonic with the sp. fluid.

Bosse (1906)—Stovaine Alypin Novocaine; 55 cases; 8 misses (6 complete).

De Franchesci (1906)—Tropa-Cocaine; 420 cases; 1 miss.

Sonnenberg (1906)—Novocaine-Suprarenin; 354 cases; 17 misses.

Sonnenberg (1906)—Novocaine-Suprarenin; 82 cases; no misses.

Steinthal (1906)—Novocaine; 69 cases; 9 misses.

Steiner (1906)—Stovaine; 50 cases; 10 misses.

Babcock (1906)—Stovaine always achieved a certain degree of anesthesia; it often sufficed.

Donitz (1906)—300 cases; 4 per cent misses.

Morton (1902)—Cocaine; 673 cases; no misses (60 above the diaphragm.)

In 102 cocaine analgesias, I had four complete failures that is, absolutely no anesthesia; in the first series of tropa-cocainizations, 35 cases, dose, 2-3 to 1 grain, there were two failures; with stovaine, 11 cases, no failures; in my last 52 cases with tropa-cocaine, dose, 1 to 1¼ grains, natural product, there were no failures. Of incomplete anesthesias, that is, where the analgesia did not extend high enough, cocaine gave 11, tropa-cocaine, first series, 4; stovaine 1, and tropa-cocaine, second series, 3 cases. Of these 3, 2 were due to gross errors in technic. In one the syringe leaked, in the other on injecting forcibly, the syringe slipped from the butt of the needle, and most of its contents were spilled. In the third case, operation for inguinal glands in very nervous patient, the analgesia with gr. 1 reached to the thighs only. Nervous patients generally make poor subjects for anesthesia, whether general or spinal. Guinard has lately reported two cases of fatal syncopy produced by fear, before the anesthesia was begun. In these nervous patients, increased pressure of the spinal fluid seems to be the cause of the faulty anesthesias.

Height of Anesthesia—It has been the constant reproach of spinal anesthesia that it is undependable and inconstant. It is not there when you want it, and everywhere when you do not want it. Provided that the correct technic is used, and provided that too much is not demanded of the method, I believe that in the future we shall be able to overcome that reproach. Aside from the drug and the technic, the two explanations of the uncertainty of this procedure are injecting too far forward in the spinal canal, thereby entangling the solution in the meshes of the corda equina and thus hindering its ascension (Donitz), and the increased pressure of the spinal fluid. First reason is particularly applicable to those who use a needle with obturator in making the puncture. But it can also happen when the plain needle is used. I have already inserted the needle to the anterior wall of the spinal canal before getting the liquor to flow. Regarding increased pressure, we have frequently noted that where the spinal fluid spurts forth, with our needle it normally drops, the anesthesia is likely to be low. As an example of this, the following case is very instructive: The patient was one who had already been injected three times. At the fourth injection I tried the experiment of cording the lower limbs, expecting thereby to reduce intracranial pressure and get high anesthesia, but, instead, I got the direct opposite. As this one case illustrates a number of points, I shall briefly report it.

Patient—Sam B., age 34; internal organs normal; operation, wiring of fractured femur, September 4, 1906. Trop., gr. 1, between second and third spines. Patient sitting; small syringe; fluid dropped clear. Anesthesia to umbilicus. Course, ideal. Post op., no headache, no retention of urine, no nausea, no vomiting.

Second puncture, October 23, 1906. Removal of wire, puncture between second and third spines; tropa, gr. 1, between the second and third spines; small syringe; patient lying on left side. Fluid dropped as before. Anesthesia to the anterior sup. spine. Anesthesia began on the left side first. Course during and post op., ideal.

Third puncture, November 8, 1906. Tropa, gr. 1, between the third and fourth spines; small syringe; patient on right side. Spinal fluid as before. Anesthesia, prompt and equal on both sides up the ant. sup. spine. Post op., as previously.

Fourth puncture, January 12, 1907, breaking up adhesions in the kneejoint; ten minutes before the puncture, legs corded with rubber bandage. Tropa, gr. 1, between second and third spines; patient sitting up; spinal fluid spurted out, that is, under pressure; anesthesia only to anterior, sup. spine. Post op., no vomit, no retention, but severe headache for seven days.

This case, then, serves to demonstrate four facts: (1), That you get a higher anesthesia by puncturing in the sitting than in the reclining position; (2), that the side on which the patient lies sometimes becomes anesthetised first; (3), that increased intraspinal pressure lowers the level of the anesthesia (this I have noted often in other patients repeatedly anesthetised); (4), that under the same condition the action of the drug is the same. The severe and prolonged headache following the last operation was probably due to increased pressure. Height of anesthesia, then, will depend upon proper technic, pressure of the spinal fluid, and posture. To this I may add level at which the puncture is made, and size of dose. Still, even with a large dose, high pressure will depress the anesthesia. To illustrate:

G. Rossi, age 29; scrotal hernia. Tropa coc., grs. 1¼, between second and third spines. Patient very nervous. On prick of needle straightened up, so that I had to puncture a concave instead of a convex back. Spinal fluid spurted out in a wide stream, great pressure. Injection given forcibly with a 5 c. c. syringe. In 20 minutes the analgesia was only at the anterior superior spine, and in 40 minutes had disappeared from the entire body.

Therefore, to secure high anesthesia, inject high up, say between the first and second lumbar spine, and lower or overcome the pressure of the spinal fluid. There have been various methods suggested of accomplishing this latter; one is to use large quantities of the spinal fluid, 5 to 10 cc. as a solvent (Eden); second, the use of the Trendelenberg position (Kader); rapid and forcible injection (Morton); injection in the cervical region (Tait and Cagliari), allowing various amounts of spinal fluid to run off, then injecting the tropa coc., dissolved in 5 to 10 cc. I have tried this latter as yet in 5 cases only, allowing between 3 and 6 cc. to escape. The doses were 1 grain and 1¼

grains (2 cases) given between the second and third spines. Analgesia reached to the nipple and no headaches followed. This method has been given a most thorough trial by Lefilliatre. His article appeared in the Journal de Medecine de Paris, 1905, Nos. 29-31, under the title, *"Nouvelle Technique permettant une immunité absolue."* He allows 6-10-30 cc. to run off from the time the liquor begins to drop. He claims that this procedure renders spinal analgesia so harmless that he still retains the use of cocaine. Here, then, we have one of the incidents that makes the study of spinal analgesia so bewildering. Author after author, from the time of Quincke down, has emphasized the necessity of losing as little spinal fluid as possible, and here is a man who loses as much as possible, with the best of results. When we consider, however, that in operations on the spinal cord we lose not *minims* but *ounces* of fluid, this procedure does not appear so revolutionary. Furthermore, those patients whose spines have been operated upon have not presented any of the symptoms that often accompany spinal cocainization with loss of little fluid.

My highest anesthesia in the last 52 tropa-cocainizations was one up to the neck (brachial plexus), in a man of 56 operated for hernia; dose, gr. 1, between the first and second spine. In the days of cocaine, I sometimes got anesthesia of the entire body, but my records having been destroyed, I cannot state the number of times. However, latterly, we have never tried to do high operations with tropa-cocaine, for, firstly, it was not under control; and, secondly, the anesthesia was too short.

One of the chief faults of tropa-cocaine has been its brief duration. While ½-grain dose of cocaine gave a 2-hour anesthesia at the anterior superior spine, a 1¼-grain dose of tropa-cocaine gives scarcely an hour. In 1¼ hours, the anesthesia will recede from the margin of the ribs to the middle of the thighs. It will remain at the anterior superior spine for 20 minutes, and then begin to descend. Stovaine gives a longer anesthesia. With a ½ grain of cocaine, or a little more, it was sometimes 3½ hours before the anesthesia left the anal region, while 1½ grs. of tropa-cocaine will at times give only a 40-minute anal anesthesia. As a consequence of this, do not use the latter in prolonged operations, and in cases where you do use it, operate quickly.

Now, touching the matter of the use of adrenalin in spinal analgesia, I have tried it in a few cocainizations, and found it absolutely valueless in sustaining blood pressure, or avoiding the disagreeable accompaniments. It may be that boiling rendered it inert, although assured to the contrary by the manufacturers. Sikemeier (Centralbl. f. Inn. Med., 26, 1906; p. 669 ref.), as a result of 52 animal experiments and clinical experience, found that the addition of adrenalin had little or no influence in increasing the anesthetic power of cocaine. He found at the same time that it did not lessen its toxicity. On the other hand, it is quite possible that adrenalin may have a large share in the responsibility for the paraplegias and eye muscle paralyses that have occurred since its introduction into spinal analgesia. Biberfeld (Deut. Med. Woch., 14, 1907), in animal experiments, noticed that its first effect was absence of pupillary reflex, a sign that the suprarenin had paralyzed the ocular motor centers. Furthermore, he frequently got paralysis of legs in cats and rabbits as consequence of the spinal anemia. He therefore asks whether adrenalin may not have something to do with the paralyses and sudden deaths after spinal analgesia. One thing is certain, it is a powerful irritant, and is therefore capable of inflicting damage to the spinal cord. For this reason, many operators have never used it, and those that have are gradually giving it up.

Nothing better illustrates the difference in the toxicity of cocaine and tropa-cocaine than a comparison of their actions on the operating table. There is only one expression with which to characterize the course of a tropa-cocainization, and that is ideal. Compared with cocaine, it is benignancy itself. Twenty minutes after a spinal cocainization with almost clock-like regularity, the patient became pale, nauseated, vomited. The pulse got weak, and the blood pressure rapidly fell. Involuntary defecation occurred, and the patient, with sighing respiration, lay on the table in a drenching perspiration. In one instance, hernia in an elderly patient, no radial pulse could be felt at all for half an hour. Needless to say, such incidents tended to make the operator very uncomfortable, to say nothing of the patient, and cocaine very unpopular. Even worse, was the experience that at times, with only slight or no anesthesia, you still got violent intoxication symptoms. Lefilliatre, after an unsuccessful injection of 1-6 gr. cocaine, got a paraplegia. With tropa-cocaine, on the other hand, such symptoms are of the greatest rarity. In 89 cases, there was only one of incontinence of faeces in a very anaemic, weak, tubercular woman, who was suffering from incontinence before the operation. Shock such as followed cocaine never occurred. Patient scarcely ever even perspired. In one man of 56, the pulse went down to 44, but 1-100 gr. of atropine promptly brought it back to 70. In this case, 1¼ grain was given between the second and third lumbar spines; spinal fluid clear; low pressure. Small syringe, injection gently made; anesthesia to the ensiform cartilage. No nausea or perspiration; operation for ununited fracture of neck of femur. This same patient had had a previous injection of gr. 1 between the first and second lumbar spines, given forcibly with analgesia onto the neck, but without any untoward symptoms. Tropa-cocaine does have a slight depressant effect on the vaso-motor system, but by far less than that of cocaine. With stovaine, my personal experience is slight; only 11 cases; but amongst these there was one of slight shock, 40 minutes after administration. On the table, therefore, stovaine, in doses of 4 to 6 cgms., gave practically no untoward symptoms in my series. If it had acted as well after operation, it would have been the ideal anesthetic. When I abandoned

stovaine, I had not yet heard of its paralytic effect on the eye muscles (adrenalin?) on the respiratory centers, of the paraplegias, nor of the deaths following it; but the fact that the alkaline spinal fluid decomposed it, that it was a motor as well as a sensitory paralyzer, and that the patients, almost without exception, felt so absolutely miserable afterward, with headache and vomiting, prejudiced me unalterably against it.*

The question whether these intoxication symptoms are due to the action of the poisons on the higher centers directly, or indirectly through the circulation, has given rise to much discussion and experiment. I consider them due to action by way of the circulation, because, (1), In cocaine analgesia they always occurred about the same time after injection, regardless of the extent of the anesthesia; (2), they often occurred when there was little or no anesthetic action of the drug; (3), in universal analgesia (cocaine), where one would expect them most frequently, you got them least frequently. Clapp, from Bier's clinic, found that substances are absorbed into the general circulation more quickly from the sub-arachnoid space than when injected sub-cutaneously, and referred the tolerance of old people for cocaine to their slow circulation. (Archiv. f. Clin. Chir., No. 75.) Heinecke & Laven (Archiv. f. Clin. Chir., 81), by experiments on rabbits and cats with novocaine, concluded that absorption into the circulation was not a factor, but that the untoward results were due to the direct action of the drug upon the spinal cord. The only comment I have to make is that while these experiments may be perfectly correct in so far as they effect the lower animals, we should exercise some reserve in their application to human beings. For instance, a 7½-gr. dose of morphine, while a safe anesthetic dose for a dog, would be rather dangerous if applied to a human being.

The after-effects of a spinal analgesia begin to show themselves as soon as the analgesia wears off. They comprise pain in the wound, pain in the back, nausea, vomiting, headache, retention of urine. Further and more infrequently occur paresis of lower extremities, of which we had one case; monoplegia, paraplegia, paralysis of eye muscles, none of which has fallen to our lot.

Headaches occur quite frequently and with varying intensity, at times reaching the atrociousness of the pain in meningitis, as after stovaine analgesia, again amounting merely to a slight discomfort (tropa-cocaine). These headaches may last a long time, for weeks and months in fact. The longest in my series was 7 days after tropa-cocaine. One case reported by Deetz had lasted 6 weeks at the time of publication. One from the Charite in Berlin lasted 5 weeks. While headaches of from 5 to 14 days' duration are frequent, these have all followed stovaine.

In my series, cocaine and tropa-cocaine have about the same percentage of headaches, 18 2-3 for the former, 17 2-3 for the latter, while stovaine, the worst offender of all, gave 72 8 11%, that is, 8 in 11. All writers report headaches. Deetz had 14% in 360 stovainizations; Tuffier, cocaine, 40%; Schwartz and Baisch, tropa cocaine, 16 2-3%; Neugebauer, about 30%; Slaimer, 25%, slight, 2% severe. Hermes, stovaine, 8 days to 8 weeks. Hauber, 200 cases stovaine, 40%, lasting from 10 to 17 days. One patient had severe headaches a quarter of a year. Lexer got headache in 25% of his cases, lasting for days, and very severe. Novocaine also produced headaches in 30 to 60% of the cases.

In my last 54 tropa-cocainizations, there were 12 headaches, one 7 days, severe, one 3, one 2 and the rest 12 to 24 hours each. In none of these had spinal fluid been allowed to escape. There are many conjectures as to the cause of these headaches. Meningeal irritation was assigned as a cause. I failed to find any evidence of this in the spinal fluid of one patient with severe headache. It was difficult to find cells, even after half an hour centrifuging. In the light of late publications (Chaput, Offergeld, etc.), it is peculiar that the withdrawal of over 2 drams of fluid gave this patient only temporary relief. For the literature of the past year contains many reports of the almost instaneous relief afforded by the withdrawal of spinal fluid in headache, delirium, convulsions and other untoward after-effects of medillary anesthesia. Chaput was the first to introduce this measure (Centralbl. f. Chir., No. 20. 1905). Schwartz, who had only 17 slight headaches in his last 300 cases, thinks they are due to the irritation produced by the blood extravasated at the site of puncture, and not to the effect of the drug, because simple lumbar puncture is so often followed by headache, etc. But, in six of my cases with very blood-stained liquor, 4 had no headaches and 2 only slight ones (12 hours). Finally, we have the theory of increased pressure, which is most probably one of the true causes. This was demonstrated with the clearness of an experiment in the patient before mentioned, who received 4 spinal punctures. The one that showed increase of intracranial pressure was followed by headache. Offergeld (Centralbl. f. Gyn., vol. 31. No. 10) referred in the Journal, A. M. A., May 11, 1907, demonstrated the increased pressure on rabbits, and applied the knowledge gained to guard against headaches in the human being by withdrawing 1 to 2 cc. of fluid before injecting the anesthetic. My cases, in which the fluid was withdrawn for the purpose of overcoming pressure and allowing higher anesthesia, were none of them followed by headaches (number of cases, however, too few). In the Bier clinic they also allow the fluid now to run off ad lib.

Another important after-effect of spinal anesthesia with tropa-cocaine is retention of urine. This occurred 10 times in my last 53 administrations. The longest was 4 weeks, following an operation for ischio-rectal abscess. Next 7 days 2 cases, piles.

* Schwarz (Oelsner) reports examination of urine of 60 patients after sp. stovaine-adrenalin—13 were normal, 47 showed evidence of nephritis, 28 rather severe (½ per cent albumen and many cylinders), 4 very severe (2 to 7 per cent albumen). Duration, 2 to 28 days. All recovered. No relation between the severity of after effects and the nephritis.

Then one of 5 days, also after piles. The remainder were 2 cases of hemorrhoids 2 days each, internal urethrotomy 2 days, hernia 2 days, varicotomy 12 hours. Of 10 hernias, only one had retention. Six of the 10 cases of retention followed operations on the rectum—all the protracted ones did. This often occurs after general anesthesia, but never to the extent of 4 weeks. This case was as follows:

Frank X., aged 63; ischio rectal abscess, June 19, 1906. Operation, incision with division of the sphincter. Tropa coc., gr. 1, between the second and third spines. Small syringe, spinal fluid clear, normal tension, anesthesia up to the ensiform cartilage. Course, ideal. Post op., no pain or headache, but obstinate retention for 3 weeks. Then voluntary urination on one occasion, then further retention for another week, after which his condition became normal. Patient was in bed part of the time and up part of the time. He had been normal before the operation and showed no signs of spinal-cord disease, nor was there any history of syphilis.

In the other cases of retention, there is nothing of particular note. The prolonged retention following spinal analgesia is undoubtedly due to the action of the drug directly on the spinal cord, and has been known ever since the cocaine era—in fact, the method of treating incontinence of urine by epidural injection is based on this observation. (Cathelin.)

As regards cocaine and stovaine, I cannot give accurate details. I can only state that neither gave as long retention as tropa-cocaine, there being one case of 3 days' duration in 11 stovainizations—extirpation of inguinal glands.

Pain—A few patients complained of pain in the back, in one necessitating an injection of morphine. Pain in the wound occurred more frequently, and sometimes reached great intensity. This occurred particularly after bone and haemerrhoid operations, and strange to say, not after hernias. The pain sets in as soon as the anesthesia has entirely disappeared, and in one case lasted two and one-half days (wiring of femur).

Vomiting—Four patients out of 54 vomited slightly on returning to bed, one of whom, a boy of 14, had vomited before the puncture was given. Compare this record with ether.

A few patients complained of slight weakness of the back and legs on getting up, but this symptom rapidly passed away, with one exception, as follows:

Samuel L., age 38 operated February 16, 1904, for fistula in ano. Tropa-cocaine, gr. 1, between the fourth and fifth spines. Anesthesia prompt and up to the ensiform cartilage. No untoward symptoms during or after operation, except a temperature of 101 2 10 the next day; but 10 days later on patient getting out of bed, found himself unable to walk or even stand. In bed he moved his legs readily enough. No ataxia, no disturbance of sensation. The only factor of note in his previous history was soft chancre. There were no signs of lues on the man. His condition slowly improved. By degrees he managed to stand, and then to walk, afterwards getting about on crutches. On leaving the hospital, two months after operation, he was not yet able to raise his legs in walking. On April 17, 1906, that is, 2 years 1 month later, he had entirely recovered, except for a weakness in the lower part of the spine whenever he strained. In all, it had been between 4 and 6 months before he had regained the use of his lower limbs. Examination now showed a normal nervous system.

Here, then, we have an example of paraparesis after tropa-cocaine. That is was due to the drug, there can scarcely be any doubt. A lumbar puncture per se could scarcely have caused it. That the outcome was not graver is due to the slightly toxic drug used. Had stovaine been used, it is my firm conviction that a permanent paralysis would have resulted. In a case of paraplegia reported by Koenig of Altona, stovaine 1 gr. and adrenalin were used. The operation was for suture of a fractured patella. The puncture was given between the 3rd and 4th lumbar spines. The fluid was not clear, but rose-colored. In 15 minutes the anesthesia extended to the epigastrium, and from that time on the body of the patient from the umbilicus down became as dead as though the cord had been completely severed. The patient had the usual sequelae of stovaine, headache, nausea, pain and fever. A puncture 1 week later showed the same rose-colored liquor, which on culture proved sterile. Post-mortem 2 months later showed adhesion between the cord and the dura from the 9th dorsal vertebrae down. The cord itself showed the changes of softening, so that on cross-section in its lower portion, it ran like pus. Koenig explains the paralysis as due to the toxic action of the stovaine on a damaged cord. He thinks the red color of the spinal fluid denoted some pathological change in the cord so as to render it specially susceptible to the poison. I have already injected very bloody spinal fluid without any bad results, but I never use adrenalin. (Koenig Munch. Med. Woch. 23. 1906.)

Before closing, I wish to report the case of a patient with paraplegia, who died in the University of California surgical ward at the City and County Hospital. He had been punctured elsewhere and operated on for varicose veins of the right leg in March, 1904. Unfortunately, no details have been obtainable, so that all we can state is that the patient, J. D., received a spinal anesthetic, which was followed by a permanent paraplegia, extending to the umbilicus. Unlike Konig's, which gave a picture of complete destruction of the cord, this case gave a typical picture of a transverse myelitis of the dorsal cord—analgesia disturbance of thermal and tactile senses, incontinence of feces and urine, trophic ulcers, contractures, increased reflexes. Patient died April 20, 1905, 13 months after operation.*

This case is one of many, I believe, and just as it was never reported, so there are undoubtedly many others including deaths, which never see the light of publication. There are not many like Bosse who had the courage to publish the "worst statistics that have yet appeared." In 55 cases of stovaine, alypin and novocaine anesthesia, he had 8 misses (6 complete) one of paraplegia of the lower

* Further light has been thrown on this case: Tropa-cocaine was probably the drug used, and the patient gave signs of spinal cord disease before the puncture, viz.: did not walk into the hospital unaided, and in the ward had various nervous disturbances to which no attention was paid at the time (tabes?), so that we have here an example of the effect of a spinal injection upon a damaged spinal cord.

extremities and 2 deaths. He said, however, that his object was to bring into prominent view the shadowy side of spinal anesthesia. He succeeded!

I have had no deaths in my series, but in 6875 cocaine analgesias reported by various authors, there were 24 deaths—1 in 275; 7059 tropa-cocaine, 10 deaths—1 in 705.9; 5636 stovaine, 7 deaths—1 in 805; encaine, 817—1 death; novocaine, 947, 3 deaths—1 in 315 2 3. (Strauss, Deut. Zeit. f. Chir., July, 1907.)

Among these are some that, strictly speaking, do not belong there, the deaths having occurred rather post hoc than propter hoc, so that Strauss, by careful selection, figures out a mortality of 1 in 2524. To illustrate how deceptive statistics are, the above table gives the relatively harmless tropa-cocaine a mortality of 1 in 705, while the far more dangerous stovaine gets off with 1 in 805. In the above reported cases, there are surely no concealments, the death rate is bad enough without. Compared with spinal analgesia, chloroform and ether are practically harmless; yet I do not think our case as bad as it may seem. The optimism and indiscriminate puncturing of the past is giving place to a saner attitude. The more poisonous drugs have been eliminated. Technic has been perfected, and operators have become more skillful, so that the future will show a decided improvement in the death rate and accidents after spinal analgesia. We must learn, moreover, to avoid such accidents as befell Koenig, and never inject where we suspect a diseased spinal cord. In such cases even the non-poisonous tropa-cocaine may have dire effects. If we can be sure of our ability to avoid such accidents in the future, spinal tropa-cocainization will have a fixed place amongst the accepted methods of anesthesia. That it will ever rival ether or chloroform is out of the question, but it will have its uses and in selected cases will be the method par excellence.

Literature—1. Strauss—Present Status of Sp. Anesth. Deutsche Zeitschrift fur Chirurgie, July, 1907, Vol. 89, Nos. 1-4, p. 133. This work gives the complete literature of sp. analghesia up to the time of publication.

2. Bosse—"Die Lumbalanásthesie," by Dr. Buno Bosse, 1907, gives the best resume of the literature up to the present time. The following have appeared since:

Ach—Sp. Anesthesia. Munich Med. Woch., Aug. 13, 1907, No. 33.

Hesse—Complications after Sp. Analg. (tropacoc.), Deut. Med. Woch., 37, Sept. 12, 1907. (Ref. J. A. M. A.) Oct. 19, 1907.

3. Kronig—Gauss-Munch. Med. Woch., July 1, 1907. One thousand cases of Sp. Anesth. (Stovaine-adren.) with Scop-Morph.

4. Oelsuer (Sonnenburg's Clinic) 875 cases Sp. Analgesia (Stovaine, novocaine, adrenalin, stovaine, adrenalin), Deut. Zeitschaf. chir. v. 90, Oct., 1907.

5. J. Oehler (Kummel's Clinic), 1000 cases of Sp. Analgesia (eucaine, stovaine, novocaine, alypin, finally tropa-cocaine with adrenalin). Beitragez. Klin-Chir., vol. lv., p. 425, Nov., 1907.

6. Uselessness of adrenalin in Sp. Anesthesia. Nickelssohn. Munich Med. Woch., Dec. 10, 1907, No. 50.

A PLEA FOR U. S. ARMY CONTRACT SURGEONS.

By H. du R. PHELAN, M. D., San Francisco.

The untimely death of Major Carroll of the Medical Department of the Army, brings out the fact that it was as a contract surgeon that he earned at the cost of his health and of his life the title of "Benefactor of Humanity," by the discovery of the agent of transmission of yellow fever.

As it will be remembered, in the year 1900, a commission was appointed to meet at Havana for the purpose of investigating the etiology of yellow fever then prevalent among our troops. This commission was composed of Dr. Walter Reed, Dr. James Carroll, Dr. Jesse W. Lazear and Dr. Aristides Agramonte. Carroll, Lazear and Agramonte were all three contract surgeons—that is, civilian physicians serving under contract with the Army. Dr. Reed alone held a commission in the regular establishment.

If I remember right, it was agreed among the several members of the commission that each in turn would expose himself to the bite of an infected mosquito in order to prove the theory of transmission of the disease by that insect. Contract Surgeon Carroll was the first to contract the disease experimentally, and this was all the more heroical that he had a wife and five young children depending on him for support. Contract Surgeon Lazear allowed himself in turn to be bitten, and soon after he gave up his life in behalf of science, leaving a widow and two children, the younger of whom he had never seen. Major Surgeon Reed was absent in the United States at the time his colleagues were exposing themselves to infection, and was never bitten experimentally by a yellow fever mosquito. Contract Surgeon Agramonte, as an immune, was a lesser hero but a no lesser scientific and painstaking member of the commission which fixed upon the mosquito stegomyia fasciata the odium of spreading yellow fever and death throughout the world.

The achievements of these contract surgeons should have been sufficient to attract attention to the anomalous position of a body of surgeons, the like of which exists in the army of no other nation; and yet it did not. Several contract surgeons, it is true, were taken into the regular establishment or otherwise honored, but the corps as a whole received a blow or two which deeply wounded the amour propre of its members.

For a short time contract surgeons were called Acting Assistant Surgeons, and wore the uniform and insignia of first lieutenants, the latter being of silver instead of gold. While officially they were civilians, yet they had the outward appearance of officers, and were therefore better able to maintain discipline and to otherwise perform the duties of their office. In 1901, immediately after the great discovery of Reed, Carroll, Lazear and Agramonte had startled the world, the corps of contract surgeons which already counted among its members several heroes or martyrs to science and to duty, received its first blow. The title of Acting Assistant Surgeon was denied it, and that of Contract Surgeon, which subsists till this day, was substituted

therefor. The shoulder straps, though of baser metal than those of commissioned officers, were torn from their shoulders. Following upon this, the letters "U. S.," which they had never dishonored, were removed from their collar band, and there remained on their uniform as sole ornaments a diminutive caduceus and the letters "C. S.," with which they are branded to this day.

In the early days of our Philippine venture, it was the corps of contract surgeons that was upon the scene in force. They were there by hundreds, scattered all over the islands, marching with troops, fighting with them; on the firing line, at the first aid stations, in hospitals—everywhere were the contract surgeons daily exposing their health and their lives without any hope of reward nor even of just treatment in case of misfortune. It is an undeniable fact that up to 1901, the pay of contract surgeons was stopped while they were sick or wounded, and that they were charged for hospital care as well. For several years also, during the most trying epoch of their history, they were not entitled to leave of absence like commissioned officers. Were leave ever granted them, it was only on condition that they provide a substitute at their own expense. It is also a fact that certain contract surgeons never obtained any leave at all during their term of service.

The troops which served in the Philippines from 1898 to 1901, and later, cannot fail to remember that in many instances the only doctor whom they ever knew in the field was a contract surgeon, and I am sure that in the majority of instances they remember him kindly.

Though officially civilians with no better status than that of camp followers, contract surgeons have nevertheless, with true soldierly spirit, sacrificed themselves upon the altar of patriotism. Take, for instance, Contract Surgeon St. John, who at the head of a command of thirty-eight men of Company A, Twenty-sixth U. S. V. Infantry, routed an insurgent outpost in Camarines Norte, only to be killed in the next encounter with the enemy. The body of this fighting doctor was abandoned on the roadside, exposed to the fury of the enemy until it was recovered the following day by other troops. Contract Surgeon Hulseberg, who was killed in an engagement at Majayjay, in August, 1900. Contract Surgeon Ross, who was also killed in action near Abra, in 1901. Contract Surgeon O'Neill, who was shot to death on the night of January 24, 1905, at San Francisco de Malabon, during an attack by the enemy. Contract Surgeon Snyder, recently killed in the Philippine Islands, whose funeral expenses were charged to his father, though he had given up his life to his country. In this instance at least, a tardy recognition of the sacrifice was made when the father was permitted to apply for reimbursement of expenses for burying his boy, not to exceed $75.00!

Other cases of death in action could be cited were I able to recall them at this moment. But enough blood has already been shed to prove the worth of contract surgeons as soldiers. Deaths from disease incidental to service in the tropics, or wounds received in action, are too numerous to mention, though they are additional evidence of real military service performed by these civilian physicians deemed unworthy of notice or of reward. The reports of commanding officers in the field abound with testimonials tending to show that the unfortunate "Contracts" were regarded as thorough gentlemen and most efficient officers. Several of them have even been recommended for a medal of honor, which was denied them on the ground that such reward is only for officers or soldiers, neither of which they happen to be. None could receive a brevet commission on the plea of civilian status. The enlisted men, quick to appreciate merit even among contract surgeons, have on several occasions during the war taken upon themselves to reward their officially ignored medical comrade by a presentation which met with the approval of those cognizant of the facts. Such rewards even are no longer permitted an officer, a contract surgeon being in this instance considered to be an officer, the regulations forbidding a superior to receive gifts from an inferior, though it is hard to see how an enlisted man can be inferior to a contract surgeon who has no military status at all.

True it is that, to-day, contract surgeons have less to complain of than in the past. In the Philippine Islands it appears that they perform less field work than formerly. But it must also be remembered that conditions in the islands are far different from what they were during the first five years of our occupation. It is not of hard service that the contract surgeons complain, for they have proven themselves equal to every task imposed upon them; it is not to small pay that they object, for they are willing to forego a portion of their salary under certain conditions; it is not to their social status among officers that they object, for they have, as far as I have noticed, been esteemed and respected for their personal traits or professional skill the same as if they were commissioned officers.

Their complaint is that they have no military status, no rank while serving in the capacity of medical officers of the army, through a defect in the law very easy to remedy. Rank and title are necessary in the military service, or they would long ago have become obsolete. The contract surgeon is as much in need of these prerogatives of officers as his more fortunate commissioned brethren for the performance of the military duties for which he is held to account irrespective of his civilian status.

A critic, discussing the Army Medical bill in the Military Affairs Committee room, once claimed that a sick soldier could be treated as well by a contract surgeon as by a captain or a major surgeon. This is true in so far as the sick soldier is concerned, but how about the feelings of the contract surgeon? By not having a military status, and through no fault of his own, he lives as under a cloud; he is suspected of being a medical man of inferior attainments or of blemished character, while in most instances the age limit alone forever debars him from applying for a commission in the regular service.

His name appears nowhere in the army register;

he is denied admission to certain, if not to many, military societies on the plea that he is not an officer; his claim to campaign medals, an inexpensive recognition of services in the field, has repeatedly been disapproved on the same plea, though a *veterinarian,* whose profession in civil life is not above that of a physician, is granted such medals just as if he were an officer. And yet, it requires only a ruling of the Secretary of War to grant to contract surgeons this small and yet most coveted reward! The pay of a contract surgeon remains the same irrespective of home, foreign or length of service. He is denied commutation of quarters while serving as transport surgeon or when on duty at posts where there are no public quarters available, and must provide for himself as best he can. Through wearing a uniform devoid of insignia of rank, he has been mistaken for a band musician, a commissary sergeant or a steward, and is as likely to be passed unnoticed as to be saluted by enlisted men. This from actual experience at army posts. The tenure of office of contract surgeons is uncertain. Though they sign a contract for a definite period, they may be retained indefinitely in the service, or their contract may be annulled any day, and they may be dismissed without trial and without redress by a chief surgeon of a department or of an army in the field or by the surgeon-general himself. This uncertainty as to their future also serves to dampen the zeal of otherwise capable and ambitious quasi-officers of recognized value.

Lastly, being allowed by existing regulations to wear nothing more handsome than a dark blue dress uniform devoid of shoulder straps and of other insignia of rank, and this attire not being prescribed for occasions of ceremony, contract surgeons must abstain from participating in any military function where officers are in full dress, or else appear in civilian clothes, which is out of place in most instances.

All these unnecessary and petty annoyances serve to render the life of contract surgeons unhappy, and breed discontent to the detriment of the service. The motives which prompt contract surgeons to accept service under such unfavorable conditions need not be dwelt upon at this time. The fact remains that as a corps they are an indispensable part of the medical department, and since they must serve in the capacity of officers with all the responsibilities and none of the privileges thereof, they should be commissioned.

An Army Medical bill which all contract surgeons have looked to as a remedy for existing evils, has repeatedly been sidetracked, though endorsed by the medical fraternity of the entire country and by the president as well. The American Medical Association through its journal recently said in despair that the medical profession at large had vainly endeavored to assist the army doctors, but that the latter appeared to do nothing for themselves, and that the only hope for them was in a concerted action from within. This seems incredible, and yet how seldom have contract surgeons ever raised their voice in their own behalf!

Our only hope is that the coming Congress will not overlook the unfortunate contract surgeons as it has so often done in the past. The Army Medical bill provides for the creation of a Reserve Medical Corps, U. S. Army, in lieu of the distasteful contract service. The passage of this bill would settle the question once for all, provided it be retroactive and take cognizance of service performed since 1898, in determining rank, pay and the right to campaign medals. BUT this excellent bill may never come to a vote, and it is in anticipation of this calamity, that it is deemed pertinent to sum up the wants of contract surgeons as follows:

1. The abolition of the name Contract Surgeon and the substitution therefor that of Acting Assistant Surgeon, the same as in the Navy and the Public Health and Marine-Hospital Service, or that of Assistant Surgeon Reserve Medical Corps, or that of Additional Assistant Surgeon, U. S. Army.

2. A definite status and the rank, title and pay of an officer, with a presidential commission while serving under any of the designations above given.

3. Recognition of past military service since 1898, either as volunteer or contract surgeon, in determining lineal rank in the new corps, and the right to campaign medals which are now denied contract surgeons who have earned them through participation in the various campaigns which they serve to commemorate.

If some measure is taken by Congress embodying these suggestions for the relief of contract surgeons whose claims are unquestionably well founded and just, the service will be benefited thereby.

A temporary commission for temporary service, but a commission nevertheless. Such is the plea of contract surgeons. May it be heard and heeded!

Oct. 5, 1907.

CRIMES? OR MALADIES!*

By ANTRIM EDGAR OSBORNE, M. D., Santa Clara.

It is not necessary to be very observant to notice in visiting public penal and charitable institutions, the strong similarity which exists among their inmates. True, some are being punished for crimes, while others are being cared for because of their mental and physical weakness; and yet in institutions, apparently as wide apart as a reform school and a home for feeble-minded, you will see the same cast of features and very many of the same physical characteristics. On a very slight acquaintance with the inmates, you will observe that many of them owe more to accident, influence, or the views of the committing magistrate for the fact that they are in one institution rather than in the other, than to the peculiar circumstances of their case; and in a somewhat extensive experience I have observed that frequently one judge will send the same class of boys and girls to a reform school, that his brother on the bench will commit to an institution for the care of those afflicted with mental disorders.

There is, of course, nothing new in this view

*Read before the Santa Clara County Medical Society, March 20, 1907.

of the subject to those who have given any time to the study of penology or insanity; but penology has only commenced to attract the attention of the better educated classes, and a vast majority, even of our intellectual fellow citizens, have very erroneous ideas on insanity and idiocy and their kindred diseases.

Yet it must be very evident that if there is any truth in the statement that there is a more or less close affinity between our criminal classes and those mentally deficient, the education—by which I mean the moral and mental improvement—of the former, is only to be accomplished when we recognize that we are treating a diseased mind, very often when we are endeavoring to reform an immoral boy or girl, or a criminal man or woman.

Evidently, disease and willful criminality are very different; and to punish a human being for acts committed as the result of irresistible diseased impulses, because they are of a criminal nature, is no more logical than it would be to punish an insane man for blasphemy because he imagines himself God or the Savior.

It seems to me, therefore, of the utmost importance to ascertain how much foundation there is for the theory that many criminals are mentally deficient, and irresponsible for their acts; and to make the investigation of this subject one of the principal stones in the arch, if not the keystone, of education and training in our reform schools, and it is to a few facts in this connection that I beg to call your attention.

First, let us look at the physical characteristics; sitting during an entertainment, on a platform where you can see the entire audience, you will notice many bright faces both at the reform schools and the schools for the training of the feeble-minded; but you will also notice many misshapen heads, many faces with stupidity clearly stamped upon them, and in reform schools those are usually the most difficult cases to permanently improve. They are rarely great criminally, it takes intelligence to be a great criminal just as it takes intelligence to succeed in any honest calling. But they are persistent law-breakers, petty thieves, vagabonds, who live, when out of jail, by preying on society and their fellow men.

You will notice that many boys in reform schools have a number of characteristics which mark idiots, imbeciles and the feeble-minded. They are under size, they look much younger than ordinary children of the same age, they develop no hair on their faces until late in life, and they do not progress in school with the same amount of teaching near as rapidly as common school children. Their penmanship is generally bad and erratic, and these traits are peculiarly well developed in the listless, unreformable classes whose faces most nearly resemble the idiot and the feeble-minded.

Of course, I know I will be told of hundreds of boys who have graduated from reform schools and who have made a success in life; who are tall; have full beards; write a copperplate hand, etc., but I beg that you will kindly remember that I do not claim that all inmates of reform schools are idiots, or mentally weak, but that there is a certain proportion of them who are, and that those who are, are irresponsible for their acts and do not belong in the reform school because reform school discipline can not possibly reform, but will only accentuate their trouble. I think I am not wrong in stating that all the peculiar characteristics of size, lack of facial hair, erratic penmanship, and so on are characteristic of the feeble-minded and imbecilic.

If from the study of the physical characteristics, we pass to the study of their heredity and family history, the resemblance between many reform school and weak-minded children is even more striking. In both, we have drunken and dissipated parents in many cases. We have, in both, inherited mental weakness and miserable home surroundings. I have found it difficult to get very full statistics of this branch of the subject, and therefore must speak largely from my own observation. In over fifty cases in which I have an intimate personal knowledge, all of whom were inmates of one or the other of the reform schools of the state, sixteen are found to have dissipated fathers; twelve, dissipated mothers; three at least were illegitimate, with five more who knew nothing of their parents and probably should be classed as illegitimate also. Seventeen are known to have dissipated sisters. In several cases brothers and sisters were both in reform schools. One had a father who committed suicide, two had fathers who were hung, and in one case the father was accused of outraging his own daughter and was hung by a mob for the alleged crime; and in one case only could the boy look back to both parents without shame. In all the cases but two, the dissipation, crime, etc., on the part of the parents existed prior to the children's birth. One was in a reform school before he went to the insane asylum. Only two, with a bad mother (they were brothers), and in their case the mother was a drunkard but not immoral, can be said to have done at all well. The others have struggled hard but seem utterly incapable of resisting temptation when it comes with any force.

Another characteristic of theirs is a periodical desire to tramp and wander which no possible inducements of home or home comforts can overcome. After they have "beaten" their way from San Francisco to New York, or from Texas to Maine, they will return and work for a little while, a few months and then go off for another tramp. They are unable to explain why they do this except that it is an irresistible impulse. Notice that these impulses are at first periodical, but finally become continuous. A very large number of these classes have vices to which it is only possible to casually allude. It will be said that they acquired this "tramping" to a certain extent; that is true, and yet I know of a case of a boy only eight years of age who had never been a tramp and who was in an institution surrounded by the best moral influence, and yet had vices that one would scarcely expect to see in a boy of twice his age.

The deadening of the moral senses and the ap-

parent increase in the immoral tendencies and tastes, is, I believe, characteristic in many cases of epileptics, and I have no doubt that many of the boys and girls who are sent to reform schools, are really suffering from epilepsy in more than one of its peculiar phases. The fact that these attacks of a desire to tramp, to move on, are periodical, and not continuous, would go to show, I believe, that they are more or less the result of disease. And the further fact that in some cases at the time of these periodical attacks, there seems to be on the part of the boy, a melancholia or indifference to the future, and carelessness as to what becomes of him, would all point to a trouble of a epileptoid origin.

I know a boy who is one of the best tailors I have ever seen; who works industriously and well, gives no cause of complaint sometimes for as long as two months, when he will suddenly seem to get morose and will declare that he would just as soon be in the penitentiary as out of it, and that he does not care if he is dead, and in fact on one occasion attempted to commit suicide. He always had a desire at such times to tramp and ramble. He has never committed any serious crime, yet he has been in jail numerous times. You may find his picture in nearly every sheriff's office in California, Nevada and, probably, as far east as Ogden. Physicians who have examined him are of the opinion that he is mentally deficient, and at the time of these attacks, irresponsible for his acts; yet at a reform school to which he has been committed several times, he has run away probably two dozen times with the inevitable result of being severely punished on his return. I became thoroughly convinced in this case that the boy was not really responsible for his acts, and had him committed to one of the insane asylums of the state where he has done remarkably well under a treatment similar to that extended to insane patients, though we have been unable to suppress his intense desire from time to time to run way.

The lack of intellectual power is even more clearly visible, to my mind, in the girls whom one finds in reform schools than in the boys. The fact is, that only a very small portion of what are known as dissipated women, have any strong mentality and there is no question but that a large percentage of the fallen women in our community belong in institutions for the care of the feeble-minded. You will find girls in reform schools and insane asylums, and asylums for weak-minded persons who are so identical in all their leading characteristics that it is evident that it was simply a chance or some pull on the part of the relatives and friends that landed the more fortunate among them in an institution for the care of mental diseases rather than in the reformatory. If my views are correct from what I have observed in the various public institutions in this and other states, it stands to reason that, as I have stated above, the most important thing for a magistrate to do when a case of this kind is brought before him, is to determine whether he is asked to punish a criminal responsible for his or her acts, or to consign to a hospital, an unfortunate who is irresponsible to a greater or less degree for the sins he or she commits.

The evils that flow from the present indiscriminate system of condemning this class at random to reform schools or insane asylums regardless of their mental condition, are many and obvious. In the first place, reform is absolutely impossible unless the mind and proper mental condition can be restored. Consequently to commit a person of this class to an institution where he will only have to remain for a given time instead of to an institution where he would have to remain until cured, is an injury to posterity, an injury to society, and an injury to the person himself because it makes of him a disgraced member of society, condemns him to the severity of prison life, and the associating with criminals increases the disease and debases his already low character. It is an injury to society because it adds to the already numerous population who prey upon its more industrious and respectable fellow citizens by dishonesty, murder and other crimes.

It is an injury to posterity because it allows these unfortunates to go forth and become the parents of children who are more likely to become worse morally, mentally and physically than they were themselves.

I believe perhaps as good a solution as any of the difficulty that confronts us with regard to the proper handling of these classes of human beings, is to do away with definite sentences, and to commit children to reform schools and adults to penitentiaries until such time as there is a reasonable expectancy of their having been permanently reformed. We need badly, some sort of public institutions half way between the hospitals for the feeble-minded and insane and the prisons. A place where a person of low mentality and evil tendencies can be restrained indefinitely from becoming a prey on society and a propagator of more of his kind.

Certain it is that even kindness has no permanent and serious effect on this class in reform schools, and it is impossible to do anything with them unless we realize the fact that they have no place in reform schools at all but are to be classed with the mentally weak and diseased, and treated as such.

CYSTOSCOPIC APPEARANCE IN SOME CASES OF SEMINAL VESICULITIS.*

Report of Case by R. E. PECK, M. D., San Francisco.

Inflammation of the seminal vesicles is not, as a rule, accompanied by distinct symptoms which would direct the patient's, or our, attention to the vesicles, as is the case in disease of some of the other organs of the body. Without going into the cause, pathology, etc., it is to one of the symptoms of chronic seminal vesiculitis that I wish to call attention to-night.

Some patients state that since an attack of gonorrhea they do not feel exactly right, or have a feeling of sexual weakness, with either a diminished

*Read before the Cooper College Science Club.

desire, or erethism with premature and painful ejaculations sometimes slightly blood tinged. Others have slight mucous or mucopurulent discharge. There may be burning pain and itching, a sense of weight, or as some say, "a drawn feeling way back up, I can not tell where." Gouley calls attention to a spasmodic painful contracture of the anal sphincter, and spermatic colic due to lodgment of sympexia, retained semen and mucous masses or plugs in the vesicle ducts.

In the case at hand, age 26, with history of gonorrhea two years previous, followed by a stricture, he complained of slight discharge, mostly in the morning, sometimes noticed during the day, burning pain on urination, frequent urination, not imperative, a sense of weight in perineum, sexual power diminished, desire decreased, ejaculations premature, accompanied at times by pain. There were periods of almost absence of erection with continued pollutions, causing weakness to such an extent at times, that he said he would be compelled to stop work for a day or two.

Normal calibre 32, meatus 26, a stricture in bulbous urethra passed by a number 23 acorn which entered the bladder. Posterior urethra sensitive. Prostate normal in size, notch perceptible, some periprostatic inflammation extending back over vesicles.

Treatment consisted of kali permanganate irrigations, until discharge had practically ceased; then meatus was enlarged to normal size, sounds, irrigations, massage to prostate, and an occasional instillation of nitrate of silver used.

All symptoms diminished as the urethra was brought to the normal size and condition. All discharge stopped and urine became normal, with only a few occasional shreds.

Then full sized sounds were passed at intervals of a month and an occasional massage was given for nearly a year to keep the stricture from returning.

During this time he would often complain of burning and weight in the perineum, and shifting pains which he would refer to the lumbar region, the iliac region, and groin, first one place and then another. Pollutions would be absent for a month and six weeks, to be followed by six or eight in a less number of days. At these times his old weakness would come on.

Things seemed to be at a standstill and I was at a loss to understand it, as all the organs appeared to be in normal condition. He was not satisfied and defeat seemed to be staring me in the face. Believing there was a definite cause, and with a hope of finding it, a cystoscopic examination was made.

The bladder walls were found in a normal state, both ureteral orifices were easily found, and a catheter inserted in each, and there was no disease present. But on the bladder floor about one to one and a half c m. behind ureteral openings there appeared two livid red areas, one on either side, about five by eight mm. in size, as near as I could judge, and with their longitudinal axes parallel to the median line. They appeared to be slightly elevated, and the redness shaded off into the surrounding tissue to the normal color of the wall.

Waiting several days and finding no reaction following the use of the cystoscope, a digital examination was made per rectum. By using extra force with examining hand and with the other making counter pressure above pubes, the vesicles far back were found to be enlarged and thickened, and the patient immediately complained of the part being unusually sensitive. A large quantity of muco purulent material, seminal fluid and sago-like masses was expressed. This high massage with bladder lavage was continued for two months with marked improvement, when the patient was lost sight of.

Fuller of New York has reported sixty or seventy cases of seminal vesiculites where the back part of the trigone and bladder floor was involved in these red areas, and in some cases even granulating surfaces resulting. He has been operating on them with the very satisfactory record of no deaths thus far. A deep incision is made in perineum, the prostate exposed and the rectal wall dissected off the vesicles, and when inflammatory thickening extends behind them the peritoneum is dissected off also. By the aid of the sense of touch only he makes an incision into the cavity of the diseased vesicle, curettes out the round cell infiltration, irrigates and puts in drainage tube and gauze packing which is left in about five days.

He claims that these cases are cured in this way, and that the sexual function is not crippled by it, but that it is restored where the derangement was caused by the vesiculitis.

Dr. Rigdon, discussing Dr. Peck's paper: Dr. Peck is to be congratulated upon studying his case so thoroughly. From an anatomical standpoint it is easy to understand how an inflammation of the seminal vesicles could appear upon the surface of the bladder and present the appearance described by the doctor. The tip of the vesicle reaches almost or quite to a point upon the external surface of the bladder corresponding in a rough way to the ureteral opening upon the mucosa, and the whole vesicle is closely attached to the bladder wall. An intense inflammation within the vesicle could, by extension through its wall, invade the bladder and in time produce enough congestion to show upon the bladder mucous membrane. So far as the successful treatment of these cases is concerned it is most difficult. The massaging finger is unable to reach the upper limits of the vesicle, and even if it could, the peculiar sacculation of the normal vesicle renders impossible the complete expression of its contents in this manner. Fuller's plan of operating and draining the vesicle seems rather heroic but in some instances is undoubtedly justifiable.

ZITTMANN'S DECOCTION.*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

It is often concluded that because a drug has certain chemical properties it must necessarily be of value in a given disease. This mode of reasoning is liable to lead into error. It is also erroneous to assert that because a medicament does not answer to certain chemical requirements it must necessarily be valueless, for it is not a drug's composition but its actual results on a disease that are its final test. Let us take as an illustration of our view a decoction that at one time enjoyed a great and deserved popularity in the treatment of syphilis. It fell into disuse, largely because the chemistry of the day asserted that the mercury used in compounding it was insoluble, and therefore could never reach the patient. Now, through chemistry, it is known that mercury is present in the finished decoction, and in a very digestible form.

The name of the preparation in question is Zittmann's decoction, and a remarkable feature of it is that at first sight not one of the drugs employed

*Read before the Society of German Physicians, January, 1908.

in its composition appears to be capable, in the form in which it is used, of exerting the least influence on the disease for which it is prescribed.

The old way of making this preparation is as follows: Sarsaparilla root, 100.00; water, 2600.00; then add well mixed up in a linen bag, white sugar; powdered alum, ā ā, 6.00; calomel, 4.00, and cinnabar, 1.00. Allow to stand over night in a covered porcelain or earthenware vessel. The next morning simmer gently for eight hours, then add fennel seed; anise seed, ā ā, 4.00; senna leaves, 24.00, and licorice root, 12.00. The seed should be at first brayed in a mortar and the leaves should be cut fine. Allow the mixture to stand for three hours and then strain off 2500 grams. This should be labelled Zittmann's decoction (strong).

The weak decoction is made as follows: Take the dregs left after straining off the strong decoction and add to them sarsaparilla root, 50.00; water, 2600.00. Boil gently as before for three hours, stirring frequently, and then add: Lemon peel, cassia bark; licorice root, and short cardamon seeds, ā ā, 3.00. Allow to stand for three hours and strain off 2500 grams. Bottle and label Zittmann's decoction (weak).

The dose of the decoction varies. A wine glassful each of the strong and of the weak is a moderate dose. If it proves too laxative, less may be given. Sometimes large doses are ordered, as a pint of the strong in the morning and a pint of the weak at night, but this is unusual. If the patient is kept in bed and the decoction is taken warm it undoubtedly adds to its efficacy.

The principal drugs of this preparation are sarsaparilla, senna, and two forms of mercury, calomel and cinnabar. Sarsaparilla is a soapy plant containing from one to three per cent of saponin, a small quantity of digitonin, perillin, some starch, and a bitter acrid resin. The soapy, slippery decoction made from this plant has long enjoyed a great reputation as a slowly acting alterative on sluggishly advancing diseases, such as late constitutional syphilis and leprosy. The saponins not only promote excretion through the intestinal canal, but through most other channels as well, and the digitonin, which is a cardiac depressant closely allied to saponin, probably aids in this depurative effect. Senna is another of the chief drugs in this decoction, and although it is not an antilelutic remedy, yet it is often a most useful drug in syphilis. Years ago I came to the conclusion, as many physicians before me had, that elimination is of infinite value in the treatment of syphilis. Mercury itself is a most active eliminative, as no drug will so quicken the saps of the body, nor hustle out impurities faster. If, however, the mercury introduced into the body lags in its course or in its exit, as it may readily do in many elderly and in some young people, then the addition of senna may furnish just the necessary acceleration. In the making of Zittmann's decoction a small quantity each of alum, calomel, cinnabar and sugar are tied up in a linen bag and are thrown into the pot with the other ingredients, which are then boiled slowly and for a long time. As calomel and cinnabar are mercurials, and as mercury is the most effective agent in the treatment of syphilis, this is the only part of the prescription that would seem to be written with a serious intention. According to our usual notions of chemistry, however, it is difficult to see how either the calomel or the cinnabar could reach the patient, as they are both insoluble, and are tied up in a linen bag, and are retained in the dregs after straining off the decoctions. Furthermore, by the ordinary tests, no mercury can be shown to be present in the finished decoction. Arguments based on these facts were of such weight both with pharmacists and physicians that all mercurials are left out of Zittmann's decoction, as ordered in the German Pharmacopeia, and with us also the compound decoction of sarsaparilla contains no mercury.

I shall here take the opportunity to relate an incident that occurred at a meeting of the International Dermatological Congress held recently in New York: Dr. Veiel of Canstatt had occasion, during some phase of a discussion on the treatment of syphilis, to refer to the use of Zittmann's decoction. On afterwards meeting the doctor I thanked him for having praised an old friend. He inquired, "Whom?" I said, "Zittmann's decoction." "Yes, yes," he said, eagerly, "that is an admirable though much neglected remedy, and care should be exercised to have it prepared in the old way and with mercury." He then went on to tell me that recently through electrolysis mercury had been demonstrated as present in Zittmann's decoction, and in a very easily digestible form, as the albuminate. The long, slow boiling changes some of the calomel and cinnabar into the albuminate, and it may be that the saponin of the sarsaparilla aids in the transition. It is most interesting to find that in the course of time, even from a chemical point of view, the observations of the old clinicians have been justified.

We have, therefore, in this preparation senna that acts on the intestinal glands as a laaxtive, and sarsaparilla that acts as an accelerator of exchange on many glands and tissues of the body, notably of the skin. This action on the skin is shown by increased perspiration, and this effect is heightened by keeping the patient in bed and giving the decoction warm. A just idea of the value of acceleration of exchange in the body may, we think, be obtained by studying the sinister effects of the slowing down of the nutritive processes as elucidated so ably by Bouchard. In addition to senna and sarsaparilla Zittmann's decoction contains a very easily assimilated form of mercury, and these ingredients probably account for the beneficent effects often observed following the use of this medicament. The rest of the drugs entering into the decoction probably only act as flavors and carminatives to hide the nauseating taste, or to prevent the griping effect of the senna.

It is important to instruct the pharmacist to prepare this decoction according to the old rules. Mercury, for instance, must not be omitted, and until a better way is actually demonstrated it should be added as cinnabar and calomel together with alum

and sugar in the much ridiculed linen bag. The chemists and pharmacists have already done enough harm in this direction, only to find that the stone the builders rejected has now become the head of the corner. In speaking of the alleged insolubility of calomel and deductions drawn from it in the practice of medicine, Dr. W. S. Franklin recently drew my attention to an interesting observation on the use of calomel powder in phlectenular keratitis. Calomel has long been used in this disease; and as it is insoluble some men, chemically inclined, asserted that its sole effect was that of a smooth, bland powder. To test this, very finely powdered glass was used instead of calomel, but clinically it was found not to answer. In all probability the secretions of the eye act on the calomel liberating a soluble salt that acts beneficially on the disease.

The decoction should be made at a simmering heat, as a slow fire is much better than an intense one to extract the principles out of the sarsaparilla. The length of time in boiling must not be shortened, as time must be an important factor in forming the albuminate of mercury from the calomel and the cinnabar.

Alcoholic extracts must not be used in making the docoction, as, for instance, the saponin of sarsaparilla is not soluble in alcohol, and its value would therefore be lost in any such procedure. One may give these instructions to a druggist, but the next thing on the program is to get the instructions fulfilled. This is especially difficult if the apothecary is over clever and enterprising. Then the only remedy seems to be to sit over him with a cocked pistol in your hand while the necessary steeping and boiling is being carried out.

It is not contended that this medicament is as powerful an anti-syphilitic as either mercury or iodid of potash as ordinarily given, but it will undoubtedly often help one out of a very tight place when other remedies fail. In malignant syphilis, for instance, when mercury as ordinarily given fails to control, and when iodid of potash disagrees with the stomach one is indeed in a dilemma, out of which Zittmann's decoction may help one brilliantly.

The following is an example: A young man acquired a sore that ulcerated so freely and so deeply and with so little induration as to be taken by experienced men for a chancroid. In due time a roseolar rash appeared, quickly followed by a deeply ulcerating ecthymatous eruption. From this on for four or five years the disease manifested itself in most persistently malignant ways, in the skin, mucous membranes and internal organs. He had at one time dullness over the right apex with extreme emaciation, but without cough or the presence of tubercle bacilli in the sputum. He, at another time, had marked enlargement of the liver with albumen and casts in his urine. He had also most persistent deep mucous patches in his mouth, and he had an orchitis followed by atrophic induration. Throughout his illness the patient was pale, thin and decrepit looking and probably lacked the power to form sufficient antibodies to combat the disease. I, as well as many others, used mercury by inunction, by intramuscular injection, intravenously and by the mouth, and in such dosage as to cause gingivitis and severe abdominal cramps. The lesions under this vigorous treatment would slowly and reluctantly recede, to recur almost immediately when the severe symptoms of mercurialism would subside. Iodid of potash would also slowly drive the symptoms back, but in a short time it would so disagree with the patient's stomach as to compel the cessation of the drug.

It was in an effort to relieve this disastrous state of affairs that a plan of treatment was hit upon that at least gave the patient relief from the torment of his disease, with very little distress from medication. A ten or twenty grain powder of iodonucleoid with four ounces of the weak and four ounces of the strong Zittmann's decoction after each meal would, in a few days, cause a marked change for the better in any luetic symptoms he might have.

Iodonucleoid is an organic combination of iodin probably very similar to the iodid of starch so highly recommended by McCall Anderson. It is interesting also to note what has long been known that mercury and iodid of potash in their usual modes of administration regularly disagree with patients having malignant syphilis. This curious fact has recently been commented upon both by Neisser and by Petrini de Gelatz (1).

Some years ago, in our State Society, I remember Dr. Granville MacGowan of Los Angeles presented a case of malignant syphilis where both specifics failed and where the patient rapidly recovered under the administration of Zittmann's decoction (2).

Zittmann's decoction may be given also as a mild alternative between courses of inunctions or injections of mercury, or after the prolonged administration of iodid of potash. It is also valuable in relieving those old torpid livers that have been devastated by syphilis and bombarded by all the inventions known to the cleverest of bartenders. Zittmann's decoction, well made and judiciously taken, will often get an unexpected amount of good work out of those old hepatic and intestinal glands, and will often enable the patient to enjoy many a good cocktail and a corresponding number of fine stories.

In closing I wish again to say a few words on chemistry and of its influence on the practice of medicine. That chemistry has done infinite good to the practice of medicine there can be no doubt, and furthermore the hope for future advance lies largely along chemical lines. What is objected to is subserviency to chemists, and often to men who never saw a patient. It is difficult and discriminating work to try to determine if a given medicament is doing good to a patient, but that is what a physician is for, and that is why the practice of medicine is an art and not a science.

---

(1). Note sur un cas de tertiarisme precoce par M. le Prof. Petrini de Galatz, Annales des Maladies Veneriennes, December, 1907.

(2). A case of malignant syphilis, cured by

Zittmann's detection, Granville MacGowan, M. D., Journal of Cutaneous and Genito-Urinary Diseases, March, 1901.

PERFORATION IN TYPHOID-FEVER SUCCESSFULLY TREATED BY OPERATION.*

By EDWARD NEWELL, M. D., San Jose.

On August 29th last, Mrs. M. came into my office with her son Elmer, age twelve years, who, for some weeks and even months past had not been feeling well, but for the last few days had been feeling so very poorly that the mother insisted, contrary to the boy's wishes, on bringing him to the doctor.

On examination the boy presented a pulse of 100, temperature 102, coated tongue and dusky facies. History of loss of appetite and some little diarrhea. But with all these the boy persisted he felt all right. I immediately sent the boy home and had him put to bed. Told the mother there was grave danger of typhoid fever. I instituted regular typhoid treatment with typhoid precautions, seeing the patient every morning and hearing by 'phone every evening. Fever ran as high as 104 with occasional morning remissions as low as 100.6, but for the most part it kept persistently from 101 to 103. Pulse seldom varied from 100, some mornings dropped to 90. Typical rose spots were found on the abdomen which disappeared in a few days. Urine presented a positive Diazo, abdomen very tympanetic at times.

I called in consultation Dr. Mulcahy, who concurred that the case was one of typhoid fever.

The patient went along very nicely showing little change until the twelfth day after I first saw him. On the evening of September 9th, I was hastily summoned by telephone by the boy's father at eleven o'clock, who stated over the 'phone "that the boy had a very severe pain in his stomach, and the nurse had applied hot cloths but could not stop it." When I reached the bedside I found the patient suffering from severe pain in the abdomen, which was very tense and rigid, but in the morning had been quite tympanetic, also very sensitive in the right iliac region. Patient's hands and feet were cold and he was in state of shock. Pulse 130, temperature 102. Had been down to 100 a little while previous according to statement of nurse. According to history, one hour and a half before I was called, or at 9:30, patient suddenly complained of severe pain, called for the bed-pan, had a large bowel movement, expelling a large amount of gas. On completing my examination I stated to the family that in my estimation the boy had a puncture of the bowels, and advised immediate operation, which was assented to.

Dr. D. A. Beattie was called in consultation and confirmed the diagnosis. Patient was removed to the hospital and in two and one-half hours from the time I was called Dr. Beattie opened the abdomen. We found the abdomen well filled with a creamy-like pus, the bowels were in a decidedly collapsed condition and seven inches from the ileocaecal valve we found our perforation the size of a large tack or about one-sixteenth of an inch in diameter. Other ulcers were found, but no perforation. The mesenteric glands were numerous; appendix was in good condition. Perforation was sewed up, a cigarette drain was placed at the lower end of the abdominal incision and the upper part of it closed. Dressing applied and the boy put back to bed; placed on the left side and the head of bed raised. Patient stood operation very well and instead of getting worse, as we surely expected he would do, he held his own for forty-eight hours and then steadily began to improve. Highest pulse after operation 120, temperature 101. Drainage removed in four days and wound closed by adhesive straps. Bowels were not moved until the seventh day except by low enemas. Due to infection of catgut sutures dressing of wound was continued for some time, but infection only superficial. Patient made an uneventful recovery, much to the surprise of all concerned. It is now ten weeks since the operation. The boy is now at home and normal in every way, eating well and making rapid progress toward recovery as you see him before you to-night.

According to history and subsequent symptoms, I judged the case to be in the fourth week of the disease when we operated, but according to the condition in which we found the glands it was doubtless the beginning of the third. Butler says that perforation is most common at the end of the second week or during the third, that it occurs in practically three per cent. of all cases. Caille says that it occurs in about two per cent. of all cases and is usually fatal. Osler, in his latest work, lays great stress upon diagnosis and says that in all suspected cases an exploratory incision is justifiable.

It is now twenty-three years since Leyden first proposed the surgical treatment of this malady. A surgeon, Mikuliez, did the first successful operation, giving to humanity the first ray of hope in a contest where death was well nigh inevitable. The statistics of the early operations for this accident were so discouraging that for many years little progress was made. The early statistics of Keen give a mortality of over eighty per cent., but in the last four years there has been a fall in the mortality rate from seventy four to sixty-two per cent.

According to Murphy, the symptoms of perforation are sudden and severe pain, nausea and severe vomiting, local hypersensitiveness, and absence of peristalsis in the painful regions.

But, however, the cardinal symptoms, according to the best authorities, are the sudden pain, rigidity and tenderness of the abdomen to pressure. These three symptoms being present in any case of typhoid fever, operation is indicated and demanded.

The ileum is the seat of perforation in about ninety-five per cent. of the cases and a majority of cases within eighteen inches of the cecum. The next most favorable sites in their order are the cecum or the appendix and the sigmoid flexure.

As to the time of operation, the late experience of surgeons is that in those cases in which the patients are operated on after the first twenty-four hours the majority die, whereas those operated on during the first eight hours the majority live. In the case of the patient reported to you this evening, it was just four hours from the time the acute pain occurred until he was operated upon. Dr. John B. Murphy of Chicago, whom we have quoted before in emphasizing the time of operation, says: "Can one save a patient with typhoid perforation? Yes, if operated on in time. No, if one waits until such a time as the patient is in a condition that counter-indicates operation."

This, no doubt, is the key-note to the whole situation. Osler says that it is the duty of every man who is treating patients with typhoid fever to be as familiar as possible with the symptoms and signs of perforation.

If we follow this sage advice, gentlemen, we give to suffering humanity, to whom we as physicians are called upon to administer, the last ray of light when this accident occurs.

---

* Patient presented before the Santa Clara Medical Society, Nov. 20, 1907.

SAN FRANCISCO COUNTY SOCIETY.

Dr. D'Arcy Power: While the subject of color photography has been a great deal discussed by the laity and to some extent by the medical profession, it has not so far received the consideration that is its due from the scientific standpoint. Its great value is not in making pictures, but in making records from nature. We have waited fifty years to photograph natural objects in their true colors. This we have realized to the extent that we are now able to take photographs on glass of any object to which can be given an exposure of one second or more. This will enable us in medicine to keep absolutely true records of our cases: it will aid the dermatologist, and will enable us to fix some cachexias, and finally it will be particularly interesting to the pathologist as it will enable him to photograph stained specimens directly from the microscope.

Remarkable as are the results, the manner of their attainment is even more so. In explanation let me ask you to imagine a window formed of a minute mosaic of pieces of glass each colored a primary color and so proportioned that day light passing through them would reform white light. Objects viewed through such a window would be seen in their natural colors because the rays from such objects would each find a path to the eye through a fragment of glass of its own color. Now for this imaginary window substitute a plate coated with starch granules colored in like manner and for the eye a layer of sensitive silver emulsion superimposed on the granules. In the camera the glass surface of the plate is turned outwards so that the light must traverse the granules before affecting the silver. As each primary color in the object passes through a granule of like color (on development) silver is deposited behind these granules proportionate to their nature and intensity. At a later stage this silver is dissolved away, leaving the plate clear over these granules so that light passing through and colored by them reproduces all the tints and shades of the original. The manipulation of these plates differs in detail from an ordinary plate, but presents no extraordinary difficulties. They are much slower than the plates of to-day. The ulcerated surfaces shown to-night received six seconds exposure. The syphilitic disease of the face taken in direct, but weak, sunlight, ten seconds; the microphotograph in very dull daylight, with 2-3 inch objective, 20 inches extension, one hour.

Dr. Coffey: The first case I present to you was an operation for resection of the Gasserian ganglion. This patient came to me about three years ago suffering from severe neuralgia of the superorbital nerve. Previous to coming under my care he had received syphilitic treatment: he showed no evidence of it. He presented no other symptoms than that of severe pain. The latter was of such intensity that he was on the verge of suicide. A resection of the superorbital was made removing one and a half inches. Had an uneventful recovery and returned to his home in Seattle. In two months the pain returned in the same area and also involved the second and third branch. The second attack was greater in intensity. It was then that I decided to resect the ganglion. Proceeding on lines of Cushing, in attempting to resect, the dura was accidently cut revealing a chocolate like color of the brain substance. Discontinuing further effort of resection, I opened the dura freely and the brain was of a chocolate like color of exceedingly soft consistency; from this soft mass I removed three tumors, from the size of a hazel nut to that of a walnut. The wound was closed and he had an uneventful recovery. At no time during his illness were there any symptoms of tumor. The pathological report showed them to be sphilomata. On first efforts to remove the ganglion there was a portion of the same destroyed. We have now present a loss of sensation of one-half of the upper lip and the outer edge of the tongue. On the lower lip there is a loss of sensation to pain, but a referred sensation to the temporal region. On shaving this portion of his face he feels as if the razor was touching the temporal region. The presence of the tumors as the cause or agent in producing the neuralgia is the interesting feature of this case. Had not the dura been accidently cut the ganglion would have been removed without discovering the cause of his severe pain.

The second case which I wish to present is a very severe tic-douloureux involving the three branches of the fifth nerve. This condition had existed for a year. The man was in a deplorable condition, in a state of suicidal mania. I decided to resect the ganglion. Hemorrhage, which is not an uncommon thing, was very severe and during our efforts to arrest the same the man went into a collapse; it was necessary to remove him from the table. Before doing so the wound was packed, pressing a considerable amount of gauze beneath the brain. In 48 hours he was in a good condition for continuing the operation.

The packing was removed and much to our surprise the brain had collapsed, as a result of the packing, to such an extent as to leave the ganglion freely accessible, rendering resection easy. Authorities speak of this operation being performed in two stages, especially applicable in cases of severe hemorrhage. In fact, it would appear impossible without the stopping of the hemorrhage to continue a resection. The result of the packing overcomes this obstacle and secondarily leaves a clear field for a perfect resection. The brain retracts from this pressure and little harm is done thereby.

Dr. Brown, discussing cases reported by Dr. Coffey: I saw this patient after the operation and was led to speculate with Dr. Coffey as to the cause of the recurrence of sensation in this area where the feeling had been destroyed entirely by the removal of the nerve. It seems to me in spite of Dr. Coffey's statement as to the removal of a good piece of the nerve that there must be regeneration of the nerve and growth of it. It is certain that the man is now hyperesthetic in this area. Another peculiar thing in connection with the ganglion injury is the numbness at the angle of the mouth. When he is shaved on the chin he feels it at the border of his scalp. There is a burning sensation and a burning feeling on the tongue just inside the same area. When he is touched there he feels very slightly the touch at that point, but refers it to the region of the ganglion. I have no doubt that in the manipulation of the ganglion at the time of the operation pressure was made and there must have been some injury to the second and third branches.

Dr. Rosenstirn, discussing cases shown by Dr. Coffey: In the second of my two extirpations of the Gasserian ganglion operated after the Krause method, there was also abundant hemorrhage which prevented my finishing the operation at the time. The wound was plugged with gauze and the patient removed, but again operated five days afterward. This is comparatively frequently done and has been published by Krause as a perfectly legitimate method when the hemorrhage is too severe to have the patient undergo the operation in one stage. I believe that in some of Rose's cases the same procedure has been adopted. The result in this case is very gratifying and the ease with which the second operation is reported to have been performed makes it appear a nearly wise plan to adopt this method of operating in two stages as the regulation one instead of an emergency measure.

Dr. Brown, discussing the paper read by Dr.

Schmoll, and published in the Journal of February, 1908: We are indebted to Dr. Schmoll for placing this subject so systematically before us. It is a condition which we are liable not to recognize except in its classical form. Since reading one of Dr. Schmoll's articles I have gone over some of my cases with special references to the vasomotor symptoms. I had a woman who had syphilis many years ago whose very peculiar heart lesion led me to suspect the etiologic factor. The aortic valve showed insufficiency and stenosis. Because she had certain mental symptoms I supposed that she also had some irritation of the cortex, syphilitic in origin. In the course of the syphilitic treatment she had an attack which I should have described as typical Raynaud's disease. It was recalled to my mind that she had subsequent attacks of the kind and always with cardiac pain. These followed over-eating and profound excitement. I went carefully into the history of the previous attacks and have no doubt that it was not a true Reynaud's disease but angina. I recall another case where the symptoms were on the right side, where there was no true evidence of coronary sclerosis, but a very distinct evidence of organic disease of the heart. The woman was fifty-seven years old and had an aortic aneurism with aortic regurgitation. She would frequently have several attacks of angina in a day and had been known to have eight or ten. She had to carry nitro-glycerin in large doses with her to take when the attacks came on. Finally there was a progressive enlargement of the aneurism and attacks of pain at the base of the tongue, which were controlled by iodid of potassium. She then began having typical attacks of radiating pain to the right shoulder and down to the right hand. Cyanosis is a very rare thing and so is dyspnea in coronary angina and typical attacks, to my mind, are not associated particularly with vasomotor disturbances and I cannot find in any case which I have followed, notes of a single one of true coronary angina that had symptoms of the kind. I must say that I have had very little opportunity to examine cases of angina as carefully as Dr. Schmoll has, that is, true cases of angina. Unless one lives at the bedside of such cases in a hospital, one does not have chances of studying them. One is hardly ever called in time to see such a patient in the attack in private practice. If it be coronary angina we do not have many chances for observation of the patient.

Dr. D'Arcy Power: Pain as a symptom of aortic disease has long been recognized, but I understood Dr. Schmoll to say that it was present in all cases of heart disease and was proportionate to the pathology. I am of the opinion that such a sweeping generalization would require much verification before it could be accepted. It is certainly in my experience, and I am sure must be in the experience of all of us, that many cases of mitral disease are quite latent. Pain is a symptom that a patient never fails to speak of, if it exist, and yet we constantly see advanced cases of cardiac failure from mitral insufficiency in which no complaint is made. Moreover, what is meant by the statement that the pain is proportionate to the pathology, gross pathology and cardiac insufficiency are not synonymous, and it is the latter rather than the former that determines the existence of pain when it does occur. On the other hand pain in aortic disease, apart from coronary stenosis, is frequent, and Dr. Schmoll's observations are just and valuable. Only yesterday I had an exemplification of such a case. A patient referred to me for chronic colitis complained of pain during the last two months over the left pectoral region. In the course of a routine examination I discovered a double aortic murmur with left ventricular hypertrophy. The patient had no knowledge of the existence or cause of the lesion.

Dr. Voorsanger: I agree with Dr. Schmoll as to pain existing in the great majority of patients suffering from heart trouble. I believe, however, that he has gone to too great an extreme in saying that all cases of heart disease are attended by pain. This does not agree with my experience. I also believe that Dr. Power has minimized this symptom and that it exists oftener than he has stated. Regarding angina pectoris we have definite ideas and it takes some little degree of courage on anyone's part to upset these ideas, as it does to upset any of the fundaments of medical science. Dr. Schmoll is probably correct when he says that the degree of angina pectoris is relative. I should like to ask him if he has not observed certain cases of heart trouble presenting the symptom-complex of angina pectoris where there is practically no pain. I wish to present the following problem: Is it not possible to have an angina pectoris without pain? I ask this because I recently had a case of a man sixty-seven years of age with very marked arterio-sclerosis and a double mitral and aortic lesion with attacks of dyspnea, cyanosis, fear of impending death and cardiac asthma. At one time his symptoms were so severe that he developed a suicidal mania. At no time did he have any pain. I do not believe that his symptoms can be accounted for under the name of cardiac asthma, but that the symptom complex which he presented resembled more an angina pectoris than it did the cardiac asthma. I therefore put this problem of a possible angina pectoris without pain before you for discussion.

RESOLUTIONS BY THE LOS ANGELES COUNTY MEDICAL ASSOCIATION.

The following resolutions were introduced and unanimously adopted at a meeting of the Los Angeles County Medical Association, February 21st, 1908:

Whereas, This Los Angeles County Medical Association has heard with great regret the resolutions adopted by the San Francisco County Medical Society censuring the State Board of Medical Examiners of California, and declaring that said Board has made a mistake in dispensing with the services of its Associate Secretary; therefore, be it

Resolved, That such action of the State Board, in the opinion of the Los Angeles County Medical Association, was neither a mistake nor a reflection upon the organized profession of California; be it further

Resolved, That such action of the Board was taken from motives of economy, justice, harmony and the general desire to improve the status of the profession in the State of California; be it still further

Resolved, That a copy of these resolutions be mailed to all County Societies and to the House of Delegates of the California State Society; further be it

Resolved, That a copy of these resolutions be sent to the editor of the California State Journal of Medicine for publication in the next issue of that journal.

Dr. Norman Bridge, of Los Angeles, has discontinued his connection with the Esperanza Sanatorium.

RED CROSS.

(Resolutions adopted by the Executive Committee of the American National Red Cross, October 18, 1907.)

Whereas, By international agreement in the Treaty of Geneva, 1864, and the revised Treaty of

Geneva, 1906, "the emblem of the Red Cross on a white ground and the words Red Cross or Geneva Cross" were adopted to designate the personnel protected by this convention; and

Whereas, The treaty further provides (Article 23) that "the emblem of the Red Cross on a white ground and the words Red Cross or Geneva Cross can only be used, whether in time of peace or war, to protect or designate sanitary formations and establishments, the personnel and material protected by this convention;" and

Whereas, The American National Red Cross comes under the regulations of this treaty according to Article 10, "volunteer aid societies, duly recognized and authorized by their respective governments," such recognition and authority having been conferred upon the American National Red Cross in the charter granted by Congress, January 5, 1905, Sec. 2, "the corporation hereby created is designated as the organization which is authorized to act in matters of relief under said treaty," and, furthermore,

Whereas, In the Revised Treaty of Geneva, 1906, in Article 27, it is provided that "the signatory powers whose legislation should not now be adequate, engage to take or recommend to their legislatures such measures as may be necessary to prevent the use by private persons or by societies other than those upon which this convention confers the right thereto of the emblem or name of the Red Cross or Geneva Cross;" be it

Resolved, That the Executive Committee of the American National Red Cross requests that all hospitals, health departments and like institutions kindly desist from the use of the red cross created for the special purpose mentioned above, and suggests that for it should be substituted some other insignia, such as a green St. Andrew's Cross on a white ground, to be named the "Hospital Cross," and used to designate all hospitals (save such as are under the medical departments of the army and navy and the authorized volunteer aid society of the government), all health departments and like institutions; and, further, be it

Resolved, That the Executive Committee of the American National Red Cross likewise requests that all individuals or business firms and corporations who employ the Geneva Red Cross for business purposes, kindly desist from such use, gradually withdrawing its employment and substituting some other distinguishing mark.

CRITICISM FROM AN OSTEOPATH.

To the Editor of the State Journal:

In the last issue of the California State Journal of Medicine, your editorial "Is It to Laugh" seems to merit an answer.

The editorial is aimed at the education requirements, or rather at the idea you have of them, of the osteopathic colleges in this state and elsewhere. The examination which the present State Board of Medical Examiners is conducting will answer to you better than I can, any objections you may have to the curricula of the osteopathic colleges. This examination, as I understand it, is to rate the different medical colleges according to their educational qualifications. When this inspection is finished and the rating published, I am sure that your editorial will have no grounds upon which to rest. If there were "kicks" regarding the last examinations held, it only shows that the examinations were hard. I read over the questions, especially those in anatomy, and will admit that they were hard, especially for a medical student, for it is notorious how little knowledge the average medical student has of anatomy.

Right here let me digress. Before the new law (April 1st) there were two boards and each board governed each class of candidates and judged of their qualifications. It seems to me that the old regime was the best, for the simple reason that the osteopaths and the medical men look at the same thing from different view-points. We have not the same use for the extended chemical and physiological research, for we do not use drugs, and hence do not need it. On the other hand, you do not go as deeply into anatomy, dietetics, mechanics, hydrotherapy, etc., because you try to gain results via medicatrix. In addition, bacteriology, pathology and physiological chemistry are viewed from different angles. Is it best, then, to cause each class to do a lot of work in college which is not actually used in practice?

But to go back to the editorial. It seems to me manifestly unfair to cast a slur upon us in the way you do when you do not actually know what we are doing educationally. Now don't try to point out mistakes made by osteopathic practitioners. If you do, we can beat you at that game, because we have a larger field to choose from. But look into the other side of it. Recognize this as the expounding of a new principle and give it all the help you can. If it is inadequate, it will die a natural death, and that much quicker if you let it alone. I, and I am not alone, took up the osteopathic work; not because I wanted to be an osteopath; not because I enjoy the insults of some boorish medical men; not because of the social distinction I might gain, but because I felt that I would be a better all-round helper to mankind and could get better results. Remember that the oldest osteopathic school in the world is only eighteen years old. Remember your own educational history. It took you twenty centuries to get where you are to-day. It has taken us twenty years to equal you. True, we have built upon your foundations, but the foundations and principles are as free as the air. You gained your possessions through scientists who, in the main, were never physicians. Have we not a right to use their findings? As I said above, most of us have taken up this work because of results we expect to obtain. If we fail to get these results in twenty-five years, the school will be dead. Then help yourself by helping us to find the truth. Encourage a liberal education and lend a helping hand in our experiments, and if we are in error we will the sooner learn of it. There are a good many crude things as yet and we are always willing to learn. Above all, be fair and don't take advantage of your official position.

I do not mean this in an unfriendly spirit, for I recognize that you older men are working toward a good which is the safeguarding of the people. In this I heartily concur. But grant us a respectful hearing and correct when you know we are wrong.

Yours respectfully,

E. S. MERRILL.

ARMY MEDICAL CORPS EXAMINATIONS.

Preliminary examinations for appointment of Assistant Surgeons in the Army will be held on May 4th and August 3d, 1908, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be

given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

Applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School, will not be examined in subjects of general preliminary education.

In order to perfect all necessary arrangements for the examinations of May 4th, applications must be complete and in possession of the Surgeon General on or before April 1st. Early attention is therefore enjoined upon all intending applicants.

There are at present twenty-three vacancies in the Medical Corps of the Army.

PHILADELPHIA MEDICAL SCHOOLS AND THE U. S. PHARMACOPEIA.

At an informal conference, called by Prof. Joseph P. Remington, of the teachers named below in the medical schools of Philadelphia, the following resolution was passed:

"Resolved, That it is of the utmost importance for accuracy in prescribing, and in the treatment of disease, that students of medicine be instructed fully as to those portions of the United States Pharmacopeia which are of value to the practitioner, and that members of the medical profession be urged to prescribe the preparations of that publication; and further, that this resolution be forwarded to the medical and pharmaceutical journals, and to the teachers of medicine and therapeutics in the United States."

James Tyson, M. D.; John H. Musser, M. D.; John Marshall, M. D.; Horatio C. Wood, Jr., M. D.; H. A. Hare, M. D.; J. W. Holland, M. D.; Alfred Stengal, M. D.; David L. Edsall, M. D.; Seneca Egbert, M. D.; M. C. Thrush, M. D.; James Wilson, M. D.; E. Q. Thornton, M. D.; John V. Shoemaker, M. D.; I. Newton Snively, M. D.; J. M. Anders, M. D.; S. Colis Cohen, M. D.

February 3d, 1908.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK.

Announcement of Scholarships and Fellowships.

The Rockefeller Institute for Medical Research purposes to award for the year 1908-1909 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions:

The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, physiological and pathological chemistry and experimental surgery.

They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year.

The value of these scholarships and fellowships ranges from Eight Hundred to Twelve Hundred Dollars each.

It is expected that holders of the scholarships and fellowships will devote their entire time to research.

Applications accompanied by proper credentials should be in the hands of the Secretary of the Rockefeller Institute not later than April 1st, 1908. The announcement of the appointments is made about May 15th. The term of service begins preferably on October 1st, but, by special arrangement, may be begun at another time.

L. EMMETT HOLT, M. D., Secretary,
14 West 55th Street, New York City.

SMITHSONIAN INSTITUTION.

Hodgkins Fund Prize.

The Hodgkins Fund Prize of $1,500 is offered by the Smithsonian Institution, Washington, D. C., in accordance with the following announcement:

In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man."

In the furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of $1,500 is offered for the best treatise that may be submitted to that Congress "On the Relation of Atmospheric Air to Tuberculosis."

The treatise may be written in English, French, German, Spanish or Italian. They will be examined and the prize awarded by a committee appointed by the Secretary of the Smithsonian Institution in conjunction with the officers of the International Congress on Tuberculosis.

The right is reserved to award no prize if in the judgment of the committee no contribution is offered of sufficient merit to warrant such action.

The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

Further information, if desired by persons intending to become competitors, will be furnished on application.

CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.
Washington, February 3, 1908.

COUNTY SOCIETIES.

ALAMEDA COUNTY.

The Society was called to order by President E. M. Keys, owing to the absence of Past President Dr. Daniel Crosby. Forty-three members were present. The retiring Secretary, Dr. A. H. Pratt, read the annual report, giving a resume of the past year. The report was interesting and well received.

Program: The program of the evening consisted of a clinical case presented by Dr. Henning Koford. The patient, a miner by occupation, suffered from a fracture of the third cervical vertebra seven months previous to the operation, which was performed last December. The operation revealed quite an extensive area of inflammation around the site of injury, as well as a comminuted fracture of the lamina and spinous process of the third cervical vertebra. No necrosis of bone was observed. Pressure symptoms were well marked before the operation, but have now entirely disappeared.

The paper of the evening was presented by Dr. O. D. Hamlin, under the title of "Surgical Suggestions and Observations." Preparatory treatment is an important feature in all operative work. The condition of the kidneys and gastro-intestinal tract is most important. The majority of surgical work is not emergency and the condition of the patient will often prove more serious than the operation. Preparation, therefore, should be commenced a week or ten days beforchand, whether the patient is in the hospital or not. Fermentation in the gastro-intestinal tract is the bugbear of all surgery. Flushing out the kidneys with abundance of plain water is to be commended. After-treatment is just as important as any other part of the procedure. Always be

on the alert for complications, looking well to the mental condition of the patient, as well.

Turn patient on right side if not contra-indicated by drainage or other conditions, because they are not so likely to choke or aspire the stomach contents during vomiting. There is no fixed rule, however, in regard to any position. Anesthetic vomiting is often due to peculiarities or idiosyncrasies of the patient. Stomach lavage or a large dose of hot water with soda will often relieve persistent vomiting. There should be no medication by mouth while nausea is present. For pain, do not use morphine; try sterile water. Give no narcotics for twenty-four hours if possible. Look out for post-operative cystitis, and do not use the catheter for eight or ten hours, and then only if it is absolutely necessary, as the danger of infecting the bladder is always possible. Clinically there is no difference between post-operative shock and collapse; physiologically there may be. Irritation of the sympathetic nerves causes more shock than virilation of the cerebro-spinal nerves. Toxemia from the anesthetic may simulate shock. Shock involves a vasa-motor disturbance with relaxation. For this condition, adrenalin chloride, twenty to forty minims, is the ideal medication. Strychnine or atropine may be used, but never give nitroglycerine. Crile of Cleveland, O., says strychnine is not a good remedy in extreme shock, and warns against over-stimulation. The chisel and mallet should not be used in brain surgery. The trepine and bone instruments should be preferred.

Blood pressure is an important feature and should be given more consideration. In anticipated shock use adrenalin and alcohol to prevent it. Post-operative shock generally manifests itself under the following headings:

1. Surgical shock without hemorrhage; 2. Surgical shock due to hemorrhage; 3. Toxemia from the anesthetic; 4. Mental disturbance, nervous collapse.

Wash out rectum before giving nutrient-enema. For continued enemata, small amounts preferred. Do not Trendelenberg your plethoric patients. Shock from hemorrhage is the most fatal form, having a greater mortality than shock from mental disturbance or nervous collapse. Strychnine is the ideal stimulant in respiratory failure. Concealed hemorrhage is often difficult to diagnose; sweating, however, is invariably absent, while air-hunger is always present. Invert the patient in severe hemorrhage, keeping the head supplied with blood, and bandage the extremities. Shock from the toxemia of the anesthetic generally commences during the operation, cerebral anemia being a marked feature. Psychic shock may be caused by passing a catheter, stretching a sphincter, or any severe pain when the patient is not completely anesthetized. Patients seldom die from this form of shock, and morphine can be readily used here.

Discussion: Dr. S. H. Buteau opened the discussion, stating that rest was imperative in hemorrhage. Too much water was impossible preceding an operation. The surgeon should take charge of the patient a few days previous to, and not at the time of the operation. Elevate the head of the bed in a modified Fowler position after the operation. This position assists gravity, and since adopting this method three years ago, nausea has been the exceptional thing.

The cry of pain is a welcome sign to the surgeon; it is a stimulant and increases blood pressure. Do not stop it with morphine, although heroin gr. 1/24 may sometimes be given. By using 1/2 normal saline solution per rectum he found that the enemata could be continued for a longer period. Ether he thought was a renal stimulant, and that patients secreted more urine during the anesthetic than they did several hours following. In repair of the perineum it was his custom to catheterize before the patient left the operating-room, for by doing so he often removed twelve or sixteen ounces of urine. Collapse is nothing more clinically than acute shock. Secondary shock in his estimation was a questionable condition, as it is generally due to some complication. Look out for the patient who is dull, apathetic, with marked pallor and no sweating after a serious operation. The hemoglobin is of little diagnostic purpose between shock or hemorrhage after saline infusions have been given. He would like to see a few specialists in anesthetics, as much depends upon the way an anesthetic is given.

Dr. R. T. Stratton said that he had always ignored the use of morphine following operative work, but he saw no objections to small doses of heroin where the patient was in great pain and restless. Trivial pain could be controlled by suggestion. Always ignore the vital subjects that the patients complain of. Make light of them and do not allow the patient's mind to rest upon a serious lesion. Prolonged nausea, lasting ten days to two weeks, was generally of a neurotic type.

Dr. W. A. Clark stated that in persistent nausea he often got good results by giving a large draft of hot water with a little soda. There is no fixed rule regarding the amount of water a patient should receive; her condition will generally govern that. He liked Dr. Buteau's idea of raising the head of the bed after prolonged anesthesia, as well as for other reasons. He found a low hemoglobin register when collapse was due to hemorrhage, but not so when it was simply shock. He stated that it was very easy to determine the percentage of hemoglobin, as the paper test was as accurate as any other method.

Dr. Daniel Crosby stated that from personal experience he had a profound respect for the phosphate of codeine, gr. ss, and that after the operation he thought the nurse afforded him more comfort than the surgeon's visit. He never realized before that a nurse could make a sick man feel so comfortable by poking a hard pillow up against his back. He found that by lying on his right side with the head of the bed elevated, he was most comfortable. He preferred to give oil for gas pains and not opium.

Dr. L. Love Riggin got splendid results in nausea by giving Bismuth chalk, nux vomica, and 1/6 opium. This often relieved hiccough, which is a very troublesome feature when present, and for persistent hiccough he got good results by rhythmical retraction of the tongue.

Dr. Kane said that while he agreed with Dr. Hamlin's paper in many respects, he was rather surprised that he should advocate such a prolific use of water, and wanted to know if Dr. Hamlin recommended it as a beverage for humanity in general. Much depends upon the anesthetic, the less that is used the better for the patient. Be conservative with all bleeding vessels, as every drop of blood counts in some cases. Always stop bleeding points before proceeding with an operation.

Resume: Dr. Hamlin said that sterile water was about as good as gr. 1/24 of heroin, as neither one hurts the patient very much. Do not stimulate during hemorrhage or in hemaphelia. Lavage was to be recommended for excessive vomiting.

Dr. Keys said that it was a shame to bring this interesting meeting to a close; that he was much pleased at the large attendance, as almost one-third of the entire membership were present.

On Dr. Crosby's motion the Society decided to have the regular annual banquet next month, and the entire matter to be placed in the hands of the "Program Committee."

There being no further business before the Society, the meeting adjourned at 11 p. m.

M. L. EMERSON, Secretary.

HUMBOLDT COUNTY MEDICAL SOCIETY.

The annual meeting of the Humboldt County Medical Society was held at Sequoia Tavern, Eureka, Tuesday, January 21st. Owing to the bad weather, a number of the physicians from the country were unable to attend, but despite that there was an exceptionally good attendance. The evening opened with a chicken dinner, after the disposal of which, President Gross called the meeting to order.

The secretary reported that the matter of an ordinance relating to the meat and milk inspector had been held over pending a decision from the city attorney. The matter of certain manufacturers who have discontinued advertising in the State Journal was discussed and the secretary instructed to write these firms asking that they reconsider their action.

The name of Dr. L. A. Wing of Eureka was presented for membership and Dr. Wing was duly elected.

After some discussion the secretary was instructed to have the revised fee bill and by-laws printed. It was decided to omit the monthly meetings this year, and meet the third Tuesday in April in Eureka, in July in Ferndale, and in November in Arcata.

Dr. H. S. Delamere of Ferndale read a very interesting paper on "The Over-Production of Doctors," which was thoroughly discussed and ordered sent to the State Journal.

The secretary reported fifty-seven physicians in the county, thirty-three of which were members in good standing, and that the society had a small balance in the treasury.

The following officers were elected for 1908:

President, H. S. Delamere, Ferndale; vice-president, Curtis O. Falk, Eureka; secretary, J. H. Mallery, Eureka; treasurer, J. N. Chain, Eureka; delegate to state society, F. R. Horel, Arcata; alternates, C. O. Falk and W. J. Quinn of Eureka.

The president appointed the following standing committees:

Program—Drs. Mallery, Horel and Gross.

Public Health and Legislation—Drs. Sinclair, McKibbon and Hill.

Entertainment—Drs. Chas. C. Falk, Quinn and Mills.

J. H. MALLERY, Secretary.

ORANGE COUNTY.

The Orange County Medical Society, whose regular meeting place is at the library building in Santa Ana, takes an outing once or twice a year and meets with its members in the other cities in the county. Last night it met at the residence of Dr. Rich, in Fullerton. There were present from Santa Ana: Dr. Bruner, President; Dr. Burlew, Secretary, and Drs. Barnes, Gordon and Wehrly; from Anaheim, Drs. Johnston and Beebe. The local members in attendance were Drs. Rich, Gobar, Gowan and Freeman. Papers on "La Grippe" were read by Drs. Johnston, Beebe and Freeman. The discussion was participated in by all present and many interesting points brought out. After the transaction of miscellaneous business and some fine vocal music by Mrs. Embree and Dr. Rich, an elegant luncheon was served. This was one of the most interesting and successful meetings in the history of the Society. The next regular meeting will be held on the first Tuesday in March, in Santa Ana.

SACRAMENTO COUNTY.

The regular annual meeting of the Sacramento Society for Medical Improvement was held January 21, 1908, in the grill of the Capital Hotel, President Cox in the chair.

Present: Drs. W. A. Briggs, Geo. Briggs, Cox, Hanna, Henderson, Henrikson, Jones, Look, McKee, McLean, Nichols, Parkinson, G. C. Simmons, S. E. Simmons, Spencer, Strader, Turner, Twitchell, Voisard, G. A. White, J. L. White, Wilder, Wright; and as visitor, Dr. Chas. McKee.

Application for membership was made by Dr. J. Lynch of Placerville and Dr. Chas. McKee of Sacramento.

The secretary having reported that Dr. E. LaBrie had been graduated from the Bishop's University of Montreal in 1880 and held a California State license of 1882, a ballot was taken and Dr. LaBrie elected a member of this Society by the unanimous vote of all members present.

Officers for the ensuing year were elected as follows, in all cases without contest:

President, Dr. Duncan McLean; Secretary and Treasurer, Dr. E. C. Turner; Directors—Dr. D. McLean, Dr. H. L. Nichols, Dr. G. L. Simmons, Dr. W. A. Briggs, Dr. E. C. Turner; Delegates to the State Society, for unfinished term, Dr. W. E. Briggs; for the full term, Dr. S. E. Simmons; alternates, Senior, Dr. W. A. Briggs; Junior, Dr. A. M. Henderson.

The paper of the evening was then read by the host of the evening, Dr. Duncan McLean. Topic, "Hemorrhage in the New Born." Followed by a general discussion.

E. M. WILDER, Secretary.

SANTA CLARA COUNTY.

The regular society meeting was held at the St. James Hotel, February 19th, with thirty members present. Dr. Stansfield of the Marine Hospital Service gave an excellent paper on "Plague" as well as informing the physicians how to best get rid of the rat that causes the trouble. Dr. G. D. Marvin of Agnew State Hospital presented a paper on "General Paresis," also bringing specimens of the handwriting of several people affected with that malady. Dr. K. C. Park of San Jose presented a paper entitled "Our Lack of Business Methods." After discussing the several papers, the members present adjourned to the banquet hall, where the executive committee had prepared a sumptuous repast, which was greatly enjoyed by the Society.

Dr. F. S. Pope of San Jose and Dr. J. H. Kuk of Palo Alto were elected new members.

DR. K. C. PARK, Secretary.

SONOMA COUNTY.

On February 13th, 1908, Sonoma County Medical Society met in the City Hall, Petaluma, President J. H. McLeod in the chair; members, W. J. Kerr, G. W. Mallory, W. L. Fay, J. R. Swisher, John C. Condit, I. A. Wheeler, Jackson Temple, F. O. Pryor, C. H. Thompson, Smith McMullin, Kurt Urban, A. R. Graham; visitors, Drs. H. L. Lorentzen, Portor, editor Courier; Ruth P. Huffman and McCauley.

Dr. P. M. Jones addressed us on organization and our duty to the public. Organized medical profession means that we are advancing, that we are a post-graduate medical school; that we should teach the public that typhoid fever is a filth disease, can be communicated only by eating the germ and that the germs come from feces and urine. The plague is a filth disease also. His remarks were heartily received.

Dr. Geo. H. Evans gave us a talk on the plague in San Francisco. He thought that Sonoma County should take measures to prevent the plague from her territory. He said that ½% of rats were infected in September in San Francisco, and that the percentage had increased till January gave 2%. After this splendid speech the Society appointed a committee of three to request the county health officer as to the best means of combating the problem of rats, to insure our ports against infected rodents. Dr. Jackson Temple, Dr. Smith McMullin

and Dr. J. R. Swisher were appointed and this committee is at work now.

After the Society meeting, the members adjourned to the banquet room where there was prepared by the Petaluma brethren all that is good for man to eat. A special car ran from Santa Rosa.

G. W. MALLORY, Secretary.

YOLO COUNTY.

At the last meeting of the Yolo County Society for Medical Improvement, the following officers were elected: President, T. W. Gallion, Davisville; Vice-President, H. D. Lawhead, Woodland; Secretary-Treasurer, Frances L. Newton, Woodland. The following gentlemen were named to act for the Society with the State Pure Food Committee: H. D. Lawhead, Woodland; C. H. Fairchild, Winters, and W. E. Bates, Davis.

FRED R. FAIRCHILD, Secretary.

REGISTER CHANGES.

Those members who desire to keep their Registers corrected up to date should check this list carefully. In the following will be found all the official changes (in California) received from the 15th to the 15th.

Andrus, Nancy Louisa, from Riverside to ——?

Bell, Chas. A., from Sanger, Fresno Co., to ——? Los Angeles.

Blackshaw, Joseph E., from San Jacinto, Riverside Co., to Hemet, Riverside Co.

Brooke, John E., from Riverside to ——?

Brown, H. C., from Spring to Rea Bldg., San Jose, Santa Clara Co.

Brown, Newbern N., from 131 W. 22d st., Los Angeles, to Bakersfield, Kern Co.

Campbell, Tillie, from Los Gatos, Santa Clara Co., to San Jose, Santa Clara Co.

Cothran, A. L., from 118 So. 1st st., San Jose, to Garden City Bk. Bldg., San Jose, Santa Clara Co.

Cram, Chas. Duncan, from San Jacinto, Riverside Co., to ——?

Davis, Wm. K., from Ryland Bldg. to Garden City Bk. Bldg., San Jose, Santa Clara Co.

de Chantreau, J. D., from 1759 Geary st. to 225 Kearny st., San Francisco.

Foster, Martin D., from Riverside to ———?

Franklin, Blake, from Elk, Mendocino Co., to 4598 Mission st., San Francisco.

Geraldson, Lena A., from Fabiola Hospital, Oakland, to State Hospital, Napa.

Hart, Frank R., from address unk., to Suisun, Solano Co.

Hay, Emil O., from 315 N. Vignes st., Los Angeles, to 1853 E. 1st st., Los Angeles.

Hely, Levi St. J., from Fresno to Madera.

Henderson, Wm. R., from Salton, Riverside Co., to ——?

Hitt, Merritt, from Bradbury Bldg., Los Angeles, to El Centro, San Diego Co.

Huff, Melvin B., from Corona, Riverside Co., to ——? Los Angeles.

Jones, John William, from Orange, Orange Co., to Elwood, So. Pasadena, Los Angeles Co.

Keem, Law, from Fresno to China.

Lazard, Edmond M., from Bradbury Bldg. to Lissner Bldg., Los Angeles.

Lissner, Henry H., from Europe to Lissner Bldg., Los Angeles.

MacDonald, R. E., from Randsburg, Kern Co., to Skidoo, Inyo Co.

McAulay, Martin, from Newman, Stanislaus Co., to Monterey, Monterey Co.

McCarty, Isaac A., from Corona, Riverside Co., to ——?

McGuire, John A., from Santa Cruz to 2096 W. 30th st., Los Angeles.

McIntosh, Arthur M., from Bakersfield, Kern Co., to ——? Berkeley.

Mills, Herbert C., from Arcata, Humboldt Co., to 2802 Grant st., Berkeley.

Paterson, Frank H., from San Juan, San Benito Co., to Ryland Bldg., San Jose, Santa Clara Co.

Pope, F. S., from Canada to Ryland Bldg., San Jose, Santa Clara Co.

Saph, L. V., from Ryland Bldg. to Garden City Bank Bldg., San Jose, Santa Clara Co.

Scroggs, W. R., from Palo Alto, Santa Clara Co., to Byron Hot Springs, Contra Costa Co.

Shibley, John L., from Banning, Riverside Co., to ——? Los Angeles.

Silverberg, M., from 1424 Gough st. to 707 Shreve Bldg., San Francisco.

Small, C. K., from Fresno to Los Gatos, Santa Clara Co.

Thorne, I. W., from 1434 Post st. to 2101 Webster st., San Francisco.

Thorne, Walter M., from Fresno to San Quentin, Marin Co.

Toner, M. F., from Hanford, Kings Co., to 2626 Durant ave., Berkeley.

Trueman, J. E., from 56 S. 2nd st., to Garden City Bank Bldg., San Jose, Santa Clara Co.

Wainwright, C. C., from San Jacinto, Riverside Co., to ——?

Walker, C. A., from S. P. Hospital, San Francisco, to 691 Folsom st., San Francisco.

Wallace, W. L., from Hemet, Riverside Co., to ——?

Way, Ellsworth H., from Riverside to Imperial, San Diego Co.

Whiffen, R. A., from Ryland Bldg. to Garden City Bank Bldg., San Jose, Santa Clara Co.

Whitfield, N. C., from Corona, Riverside Co., to ——?

Wiley, E. H., from Bradbury Bldg. to Lissner Bldg., Los Angeles.

Wright, Thompson B., from Banning, Riverside Co., to ——?

New Names.

Lockwood, M. M., Colusa, Coll. of P. & S., Baltimore '96 (c) '99.

New Members.

Alameda County—**Kleeman, G. E.; McKown, C. L.,** Niles; **Stidham, L. W.; Williams, C. L.,** and **Worley, H. F.**

Contra Costa County—**McKenzie, Geo.**

Fresno County—**Curle, E. W.; Gillespie, J. A.,** and **White, S. C.**

Humboldt County—**Ring, H. J.; Wing, L. A.,** Eureka.

Kern County—**Rees, R. B.,** Bakersfield; **Rogers, Chas. A.; Rogers, Homer; Schafer, Augustus F.,** and **Scott, Wm. P.**

Los Angeles County—**Bancroft, Irving R.; Orbison, Thos. J.; Scott, Alfred J.; Sherer, Wm. W.; Stevens, Geo. M.,** and **True, Herbert F.**

Riverside County—**Colburn, J. M.,** Riverside; **Holland, Joseph H.,** and **Walker, A. Dunn.**

Santa Clara County—**McGinty, A. T.,** San Jose.

Sonoma County—**Condit, John C.**

Tulare County—**White, Carlos M.**

Reinstated.

Fresno County—**Wilson A. D.**

Placer County—**Barton, O. L.**

Resigned.

Gray, A. J., San Diego.

Deaths.

Los Angeles County—Gresham, Arthur E., 218 Pine ave., Long Beach.

Santa Clara County—Dogge, Otto H., San Jose; Kelley, E. A., Agnews.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -
2210 Jackson Street, San Francisco.

Telephone, West 5975.

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI APRIL., 1908. No. 4

EDITORIAL NOTES.

Notice!

Do not forget the State Society meeting.

Coronado, April 21st, 22nd and 23rd.

Railroad rates, one fare going, one-third fare returning.

Be sure and get a receipt certificate when you buy your going ticket.

Be sure and have this receipt-certificate signed by the Secretary at Coronado.

No stop over will be allowed going, but the return ticket will be good if used within fifteen days.

By all means attend this meeting; you will regret it if you do not.

Look over the program which appears in this issue.

ADDRESS UNKNOWN.

Each month we publish, in the back pages of the JOURNAL, a list of the changes which have come to our attention during the previous month. Unfortunately, it seems to be a characteristic of the physician that he forgets to leave a new address when he moves, and he has devised the only working perpetual motion proposition! Therefore you will see in these lists (and please, *please* look for them!) many names of those who have moved to parts unknown. Undoubtedly most of these new addresses could be supplied by other physicians, and that is why we call the matter to your attention and ask your co-operation. Just glance through the list each month and when you see the name of a man listed as whereabouts unknown, and you happen to know his proper address, drop us a line to that effect. It will be of great help to us and to the members of the Society who frequently write to us for the address of some physician who is in this "address unknown" class. Will you not aid us?

A GOOD PROGRAM.

The completed program of the coming meeting of the State Society, which will be held at Coronado, April 21st, 22nd and 23rd, will be found on another page and is worth your careful consideration; it offers subjects of great and general interest presented by many men whose words will command the respectful attention of all. The Committee on Scientific Program has devoted no small amount of time and work to the securing and arrangement of this material, and the result is worthy of the effort. Now it is up to the members of the Society to attend the meeting in goodly numbers and discuss the subjects presented. The President has given his assurance that he will strictly enforce the time limit, thus avoiding the long and tedious experiences that are only too common with all learned societies, and all writers have agreed to present their remarks within a ten-minute limit. If possible, arrange to be at Coronado Monday and attend the meeting of the Public Health Association, which promises to be of unusual interest. Much attention is to be given to matters of public health and sanitation, this year, and surely no subject could be indicated that is of greater importance.

SMALLPOX.

The statement furnished by the United States Public Health and Marine Hospital Service of the number of cases of smallpox in the various states, is interesting; you will find it on another page. A contagious disease which is so easily, safely and cheaply controlled, has no excuse for existence and should be either stamped out or kept down to an insignificant minimum; yet we see it steadily increasing in a number of states. In California far too many cases are reported and we ought to consider it rather as a disgrace that this should be so. In every portion of the state vaccination should be

looked after and particular stress placed upon the compulsory vaccination law, and all school children promptly protected.

PLAGUE FACTS.

The more important points brought out by the Indian Plague Commission, whose last report was completed only in July and is published under date of October 27th, 1907, are so well brought out in a recent article in the *Military Surgeon* that we have taken the liberty of making liberal extracts therefrom which will be found elsewhere in this number of the JOURNAL. We, of California, can hardly overestimate the importance of studying this subject with the greatest care, and a merely cursory study of the findings of the Commission gives much food for thought. One instinctively draws the deadly parallel between conditions here and conditions in other infected places, and when drawn, its contemplation is not a cheerful matter. The rats, and their epizootic, we have with us, and also the two varieties of common rat fleas live in our land and flourish; our climate, which has nothing to do with the existence or spread of plague, is somewhat better than that of India, and we have not the dense population of that country. Fundamental and essential conditions, however, are too similar to be pleasant when we remember how firmly the disease has fixed itself in other places and how enormous have been the unsuccessful efforts to get rid of it in Japan, Australia, Hong Kong and India.

GAS RATES AND PLAGUE.

What has the fixing of the gas rate in San Francisco to do with the plague situation, which is a menace, not alone to that city, but to the state and the country? Well, at first glance, nothing; yet in reality, and directly, a great deal. The process of fixing the rate reveals certain underlying conditions which assuredly have a direct bearing upon the present and the future sanitation of the city and the state. On the 23rd day of March there appeared before the Board of Supervisors Mr. Isadore Jacobs, who stated that he appeared for the Good Government League and, in the name of the League, protested against the rate of gas being fixed at 95 cents. He admitted that he knew nothing about the cost of manufacture of the commodity in question, and that his general knowledge was equally vague; but a number of thousands of citizens—voters—thought the rate too high and protested against it. With the justice or injustice of the rate, we have nothing to do; we are only concerned with the fact that a large number of voters would be pleased if the rate were lowered. Has the Good Government League protested to the Mayor for the fact that he allows the Board of Works to pay wages in excess of the specific charter provisions? Can it be that the G. G. League (it sounds better the more it is abbreviated) is in any way influenced in its silence by the fact that the President of the Board of Works is Mr. Casey, President of the Teamsters' Union, powerful in the ranks of organized labor, and consequently able to control many votes? Could such a thing possibly be? The fact remains that the Mayor's servant is violating this provision of the charter and the men who are paid unlawful wages are doing mighty little for a day's work—and the league of "good governmenters" is most distinctly silent. Is it politics, little, dirty, peanut politics that leads to the appointment of the first teamster in the city to the administration of millions of dollars of expenditures, many of which dollars go their way in spite of a charter provision to the contrary? Can it be similar and just as pitiful politics that stirs the Good Government League to protest at the gas rate—and thus gain the hysterical endorsement of a number of voters—while at the same time the League's spokesman admits that he—and presumably the League—knows nothing about the business or the soundness of their demand?

SANITATION OR POLITICS?

If the first thought in the mind of every one connected with the city administration, from the Mayor down, is "politics," "how will this affect votes?"—what hope is there for a proper administration of the sanitary laws of the city and the ultimate eradication of plague? Can you see very much hope? And who cares a "tinker's dam"? Apparently no one, not even those citizens who banded themselves together to form a machine with which to demolish graft and elect honest men to office; and now, it would almost seem, are devising ways and means, not for the businesslike government of the city—for "good government"—but for the perpetuation of political authority, regardless of how the affairs of the city are managed and administered. Can any one point to the very slightest effort on the part of the "Good Government League," or the Mayor, to ascertain the appalling leakage of funds in many ways? With such all-embracing carelessness as to *how* the city is governed, *how* its sanitary ordinances will be administered when the present furore has departed—as it must certainly depart in due course—*how* its charter provisions are ignored and the qualifications of those who are to carry out the spending of its money, what prospect is there of relief from the anti-plague war in any number of years? And further, is this merely a matter of local interest, or does the maintenance of a plague focus in San Francisco concern the whole state and indeed the whole country? If so, is not the honest administration of the city government—a thing having a most direct and important bearing upon the continuance of plague—a matter of concern to all? We do not for an instant question the "dollars and cents" honesty of the Mayor or the Board of Supervisors; but why, *oh why!* Mr. Mayor, do you not investigate the methods of your appointees and see that the work of the city is done in a proper and businesslike manner? And why rebuff your committee of the Board of Supervisors when it calls

your attention to, for instance, the matter of the discrepancy between the wages *paid* and the wages *allowed under the charter?* These are merely points in practical sanitation; do they touch close upon practical politics? The Canal Zone, 400 square miles, is clean and healthy because it is well administered; San Francisco, 80 square miles, is filthy and will never be clean while it continues to be administered *a la* "practical politics."

WILL THEY FEEL SHAME?

The *Long Island Medical Journal* is published monthly by "the Associated Physicians of Long Island," is edited by Paul M. Pilcher and managed by a publication committee consisting of Drs. Pilcher, Overton, Terry, Donahue and Bacon. One wonders whether these distinguished physicians will ever feel shame at their participation in the doubtful profits of the shameless nostrum business which, through the pages of their publication, they aid in exploiting. Glancing through the pages of the journal which the physicians of Long Island own and control, one finds that they either have no knowledge of the revelations of fraud, dishonesty and trickery which have been published in the *Journal A. M. A.*, or they are willing to participate in the frauds and derive a measure of profit from them by publishing the advertisements of preparations which have been shown up repeatedly. What sort of balm do they apply to their consciences, it would be interesting to know, that permits these physicians of standing, gentlemen of repute and, presumably, of self-respect, members of a learned society—that permits such men to accept money from, and aid in continuing the exploitation of, such a thing as "antikamnia," for instance? This surely is an interesting problem in psychology, for in all human probability these physicians are, individually, honest and upright men who would scorn to barter their good names for some dirty antikamnia dollars; yet, collectively and officially, they are willing to advertise the stuff in the journal of their organization. It would be interesting to know whether any single member of the "Associated Physicians of Long Island" has ever protested against the advertisement of this or a number of other nostrums in the pages of his journal.

ALKALOIDAL FINANCE.

It is unfortunate that we have not space in which to print in full the exceedingly interesting essay on the Abbott Alkaloidal Co., and its methods, which appeared in the March 14th issue of the *Journal A. M. A.* The statement is most illuminating. The Alkaloidal company supplies the medicines; a related company—the Clinic Publishing Company—issues a journal which, in almost its every page, booms and boosts the output; the promoters also issue a number of text-books in which it may be found that the only really safe medicines for physicians to use are those made by the Abbott Alkaloidal Co. Never, since the early days of the *Medical Brief*, has a supposedly scientific medical journal so openly and persistently been used to promote the commercial interests of the proprietor and his proprietary preparations. Incidentally, and in passing, it may be remarked that some time ago the office of the *Journal of Clinical Medicine* burned, and the mailing list with it; the statement was made as coming from Dr. Abbott, shortly after that event, that he re-established his mailing list by going through the American Medical Directory and putting on his list the name of every member of the association which appeared in the directory. We can not vouch for the truth of this, but from the number of copies which reach our own members in California, in some occult fashion, it would seem at least possible. Not content with the education of the medical profession in the paramount value of the Abbott medicines through the pages of his own journal, we find that "While the president of the Abbott Alkaloidal Company (Dr. W. C. Abbott) is not in active practice, he has been most liberal in giving the medical profession his experiences, for he has contributed more original articles to more medical journals than any other man in the country." (Most remarkable fecundity! And from a man who is not in practice!) Again we read: "Is there any explanation of such unparalleled literary fecundity? Examination of the forty-eight articles listed shows that at least two-thirds of them advocate the use of some product of his company. Is there any casual relation between these facts?"

PROFIT-SHARING EXPLOITATION.

Thus we see that the Abbott Alkaloidal Company kindly furnishes the goods and the literature recommending them — and them only — and booms them in many and various medical (?) journals in many sections of the country; it has occurred that almost the same article appeared in three several places, credited to three different men, all booming alkaloids—and particularly Abbott's. And then the Company wanted more money; so a beautiful plan was devised and launched, well calculated to work the profession still more. This was no less than to have a greater number of men using the products of the Abbott Alkaloidal Company from reasons of self-interest. Groups of "Guaranteed Participating Co-operative Bonds" were to be issued and sold only to physicians, and as the dividends would depend upon the amount of business, those who bought the "bonds" would naturally use or order their patients to use as much of the Abbott goods as they could. The Abbott advertisements of these "bonds" lay stress upon the success of the investment *"if we all pull together."* The *Journal A. M. A.* retained a good lawyer to investigate these "bonds," and he reported that the "guaranteed bond" was "of no greater value than a simple unsecured promissory note for an equal amount." This certainly has some of the earmarks of "high finance" with a vengeance. It further ap-

pears that a goodly portion of the real estate formerly standing in the name of the Abbott Alkaloidal Company was transferred to the name of W. C. Abbott and so remains. The *Journal* states that a prominent physician wrote last fall: "Dr. Abbott told me while at Atlantic City that the bond proposition he was offering the profession was the greatest co-operative scheme ever offered, that it made an agent of every doctor who purchased a bond." Abbott and the Alkaloidal Company were involved in the failure of the Ravenswood Exchange Bank, and it appeared that the bank was really nothing more nor less than another Abbott business enterprise. But the creditors of these concerns are not pressing either the individual or the company, we understand, for the reason, as reported to us, that Abbott is said to assure them that he will very soon get the necessary money *out of the doctors;* and probably the earnings of the company are not inconsiderable. It appears, after giving this matter due consideration, that the methods followed by Dr. Abbott are not such as to conform with one's ideas of professionalism or of proper exploitation, and the Publication Committee has therefore decided that the Abbott Alkaloidal Company may not use the pages of the STATE JOURNAL for advertising purposes.

PROGRAM.

Below is given the program of the Thirty-eighth Annual Meeting of the Medical Society of the State of California. The program has been planned to be of general interest to all attending the meeting, and to this end sectional meetings have been largely eliminated. The two which occur in the afternoon of the first day of the session have been so arranged by the men in charge of them as to appeal to everyone attending the meeting.

The various programs will start promptly at the hours scheduled. The contributors to the program have expressed their willingness to abide by the ten-minute time limit set upon the reading of their papers, and that all may be treated with fairness, this rule will be enforced. Those who discuss papers are limited to two and one-half minutes. It is hoped through these means to add to the general interest of the meeting and to do away with the, at times, wearisome discourses to which an audience is so often compelled to listen.

If a contributor to the program is absent from the session in which his paper is due, he loses the opportunity of presenting his paper to the State Society. If, however, the paper has been delivered into the hands of the secretary or any member of the program committee, the secretary of the society will read the paper to the session.

TUESDAY, APRIL 21, 1908.

Morning Session.

9:30.

Address of welcome by the Chairman of the Commitee of Arrangements, Dr. F. R. Burnham, San Diego.

1. **Dr. Geo. H. Evans,** San Francisco.
   "President's Address."
2. **Dr. William B. Wherry,** San Francisco.
   "The Pathology and Bacteriology of Plague." Demonstration of specimens.
3. **Dr. Rupert Blue,** United States Marine Hospital Service.
   "The Eradication of Plague."
4. **Dr. F. M. Pottenger,** Monrovia.
   "Fourth Annual Report from the Committee on Tuberculosis."
5. **Dr. Dudley Tait,** San Francisco.
   "First Annual Report from the Committee on Medical Education."

5a. **Dr. Lincoln Cothran,** San Jose.
   "Annual Report from the Board of Medical Examiners."

Symposium on Pure Food.

6. **Dr. Fitch C. E. Mattison,** Pasadena.
   "First Annual Report from the Pure Food Commission."
7. **Dr. Titian J. Coffey,** Los Angeles.
   "The Tenement House Problem."
8. **Dr. Geo. H. Kress,** Los Angeles.
   "The Pure Milk Question. (a) Inspected Dairies. (b) Certified Dairies."
9. **Dr. Stanley P. Black,** Pasadena.
   "Meats, Fruits and Vegetables."
10. **Dr. Luther M. Powers,** Los Angeles.
   "Bakeries and Restaurants."
11. **Dr. William Freeman Snow,** Palo Alto.
   "Water Supplies."

Discussion of the papers of this Symposium by Dr. Langley Porter (San Francisco), Dr. N. K. Foster (Sacramento), Dr. W. LeMoyne Wills (Los Angeles), and others.

TUESDAY, APRIL 21, 1908.

Afternoon Session.

2:00.

Joint meetings with the Western Section of the American Laryngological, Rhinological and Otological Society, and the Pacific Coast Branch of the American Urological Association. These two Sectional Meetings will take place at the same hour in separate halls as posted.

A. **Session with the Western Section of the American Laryngological, Rhinological and Otological Society.**

11a. **Dr. F. M. Pottenger,** Los Angeles.
   "Some Practical Points in the Diagnosis and Treatment of Tuberculosis of the Ear and Upper Air Passages."

Discussion opened by Dr. Charles C. Browning (Monrovia).

11b. **Dr. H. Bert. Ellis,** Los Angeles.
   "Acute Otitis Media—In Infants and Children."

Discussion opened by Dr. A. C. Rogers (Los Angeles).

11c. **Dr. William Barclay Stephens,** San Francisco.
   "Acute Otitis Media—Prophylaxis and Treatment."

Discussion opened by Dr. A. L. Kelsey (Los Angeles).

11d. **Dr. Hill Hastings,** Los Angeles.
   "Acute Otitis Media—Indications for the Mastoid Operation."

Discussion opened by Dr. E. W. Fleming (Los Angeles).

11e. **Dr. W. H. Roberts,** Pasadena.
   "The Status Lymphaticus with Particular Reference to Anesthesia in Tonsil and Adenoid Operations."

Discussion opened by Dr. F. D. Bullard (Los Angeles).

B. Session with the Pacific Coast Branch of the American Urological Association.

12. **Dr. Granville MacGowan,** Los Angeles.
"Haematuria."

Discussion by Dr. Herbert C. Moffitt (San Francisco), Dr. Dudley Tait (San Francisco), Dr. Wesley W. Beckett (Los Angeles), Dr. W. Francis B. Wakefield (San Francisco), and others.

13. **Dr. John Campbell Spencer,** San Francisco.
"When Is Gonorrhea Cured?"

Discussion by Dr. Ralph Williams (Los Angeles), Dr. Samuel H. Buteau (Oakland), Dr. J. H. Parkinson (Sacramento), Dr. Saxton Temple Pope (Watsonville), and others.

TUESDAY, APRIL 21, 1908.

Evening Session.

8:00.

14. **Dr. Grant Selfridge,** San Francisco.
"Direct Examination of Trachea and Bronchi with Killian's Latest Bronchoscopes." Exhibition of patient and instruments used.

15. **Dr. William Ford Blake,** San Francisco.
"The Early Recognition and Treatment of Squint."

16. **Dr. H. E. W. Barnes,** Santa Ana.
"Obstetrical Reminiscences."

17. **Dr. Louis C. Deane,** San Francisco.
"Thrombosis of the Lateral and Superior Longitudinal Sinuses Treated by Opening the Torcular Herophili—Pregnancy—Recovery."

18. **Dr. Cullen F. Welty,** San Francisco.
"Indications for Operative Interference in Acute Mastoiditis."

19. **Dr. C. A. Dukes,** Oakland.
"Responsibility of the Physician in the Home Training of Children."

WEDNESDAY, APRIL 22.

Morning Session.

9:30.

Symposium on Syphilis.

20. **Dr. Stanley P. Black,** Pasadena.
"The Pathology of Syphilis." Demonstration of Specimens.

20a. **Dr. Ralph Williams,** Los Angeles.
"Acute Syphilis."

21. **Dr. Herbert C. Moffitt,** San Francisco.
"Luetic Stigmata of Importance to the General Practitioner."

22. **Dr. Samuel J. Hunkin,** San Francisco.
Dr. George A. Harker, San Francisco.
"Syphilis of the Bones and Joints."

23. **Dr. Hayward G. Thomas,** Oakland.
"Eye, Ear, Nose and Throat Manifestations of Syphilis."

24. **Dr. J. H. McBride,** Pasadena.
"Some Aspects of Cerebral Syphilis."

25. **Dr. Granville MacGowan,** Los Angeles.
"The Treatment of Syphilis."

WEDNESDAY, APRIL 22.

Afternoon.

EXCURSION.

WEDNESDAY, APRIL 22.

Evening.

HOP.

THURSDAY, APRIL 23.

Morning Session.

9:30.

Symposium on the Thyroid Gland.

26. **Dr. Allen F. Gillihan,** Berkeley.
"The Anatomy of the Thyroid and the Parathyroids."

27. **Dr. Lyman B. Stookey,** Los Angeles.
"The Physiology of the Thyroid."

28. **Dr. Dudley Fulton,** Los Angeles.
"The Medical Treatment of Diseases of the Thyroid."

29. **Dr. Wallace I. Terry,** San Francisco.
"The Surgical Treatment of Goitre."

30. **Dr. John W. Robertson,** Livermore.
"The Relation of the Thyroid to Mental Disease."

Discussion of the papers of this Symposium to be opened by Dr. Wesley W. Beckett (Los Angeles).

31. **Dr. R. F. Rooney,** Auburn.
"A Resume of the Weber Case. Was Adolph Weber Insane?"

32. **Dr. Charles W. Allen,** Los Angeles.
"The Early Symptoms of Dementia Praecox."

THURSDAY, APRIL 23.

Afternoon Session.

2:00.

33. **Dr. C. M. Cooper,** San Francisco.
"The Fallaciousness in Diagnosis of so-called Pathognomic Signs."

34. **Dr. F. M. Pottenger,** Monrovia.
"Remarks on Dextrocardia." Exhibition of Patient.

35. **Dr. O. D. Hamlin,** Oakland.
"Post-Operative Treatment."

36. **Dr. Thomas W. Huntington,** San Francisco.
"The Treatment of Fractures of the Shaft of the Femur with Special Reference to Early Operative Interference."

37. **Dr. W. Francis B. Wakefield,** San Francisco.
"Cancer of the Uterus."

38. **Dr. A. W. Morton,** San Francisco.
"The Bier Treatment in Surgical Diseases."

Discussion opened by Dr. W. W. Richardson (Los Angeles).

39. **Dr. Lyman B. Stookey,** Los Angeles.
"The Pharmacology of the Iodides."

40. **Dr. Ethel L. Leonard,** Los Angeles.
"Bacterial Vaccines."

41. **Mr. A. Halden Jones,** Los Angeles.
"Glycogen Formation from Pentoses."

42. **Dr. Ernest Dwight Chipman,** San Francisco.
"Seborrhea and its Sequelae."

43. **Dr. R. F. Stratton,** Oakland.
"Further Considerations on the Treatment of Aneurysm by Direct Gradual Arterial Closure. Report of a Second Case of Aneurysm of the Abdominal Aorta treated by this method."

Discussion opened by Dr. J. M. Shannon (Oakland).

THURSDAY, APRIL 23.

Evening.

BANQUET

Hotel Coronado.

(Plates, two and one-half dollars each.)

PLAGUE.

The Military Surgeon for March contains a very interesting article on "Plague in India," by Major Arthur Henry Moorhead, of the Indian Medical Service. Major Moorhead has condensed a good deal of the matter contained in the reports of the Indian Plague Commission, and we are very glad to make the following extracts from his article:

"Practically speaking, at the present time the whole of India is infected, though some places have not been attacked. Year by year the number of newly infected villages and towns increases, and they in turn become foci for its spread.

"The number of cases of plague and mortality from the disease has practically, year by year, been on the increase since its first arrival in the country. The annual mortality from plague in India since 1896 has been as follows:

1,704 (1896)	577,000 (1902)
56,000 (1897)	851,000 (1903)
118,000 (1898)	1,022,000 (1904)
135,000 (1899)	951,000 (1905)
93,000 (1900)	332,000 (1906)
274,000 (1901)	

"During the first three months of this year the mortality has been no less than 495,000, by far the heaviest mortality yet recorded. (B. M. J.)

"The total mortality since its first appearance has been as large as five and one-fourth million deaths. The mortality for the week ending April 20, 1907, rose as high as 70,000 deaths, practically equal to the British army in India, wiped out in a week. The total population of India is probably 300,000,000, but even so the mortality has been enormous. * * *

"The work of the Plague Commission in 1905, appointed by Government, and the results of their experiments and conclusions drawn from them is the most important contribution to our knowledge of the disease, and specially establishes the importance that rat and flea bears to the disease.

"Their first report appeared in the *Journal of Hygiene*, September, 1906, and their second report has only been completed in July, this year. The first report deals with a series of experiments carried out in Bombay, and the methods employed were very ingenious and well worth reading. The following are some of the most important conclusions come to:

"(1) Healthy rats contracted plague in sequence to living in the neighborhood of a plague-infected rat under conditions where contact was impossible, but where there was an abundant supply of fleas which could pass freely from rat to rat.

"(2) Healthy rats living in flea-proof cages have contracted plague in sequence to receiving fleas collected from rats dead or dying of septicemia plague in another cage.

"The deduction from these two series of experiments is that the rat flea conveys plague from rat to rat.

"(1) Similar experiments with guinea pigs showed that healthy guinea pigs only contracted plague when living in close proximity to plague-infected guinea pigs when fleas were given free access from one to the other and not otherwise, though they were in contact with feces and urine of infected animals.

"(2) Close contact of young, even when suckled by plague-infected mothers, did not give the disease to the former.

"(3) If fleas are present, then the epizootic once started spreads from animal to animal, the rate of progress being in direct proportion to the number of fleas present.

"(4) An epizootic may start without direct contact of healthy animal and infected animal. Thus, in the case of one of the experiments the healthy guinea pigs were not put in until the last inoculated guinea pig had died and been removed.

"(5) Infection can take place without any contact with contaminated soil. Thus, several guinea pigs and a monkey placed in wire cages two inches above the ground developed plague. Aerial infection is excluded. Thus, guinea pigs suspended in a cage two feet above the ground, which is beyond a flea's jump, did not contract the disease, while, in the same room those animals allowed to run about and placed two inches above the floor became infected. Plague can be transmitted by the rat-flea not only from guinea pig to rat, but from rat to guinea pig. Further, it can be transmitted from guinea pig to monkey. The unfortunate guinea pig was found to be a certain bait for rat fleas and use of this was made. One of the guinea pigs was allowed to run loose in the laboratory, and the rat fleas which escaped invariably preferred it to man and in this way proved a guardian angel to him. * * *

"I can only give you a few of the results of their experiments. The fleas experimented with were the *Pulex Irritans* (the human flea), *Pulex Cheopis* (rat flea) and *Pulex Felis* (cat flea), *Pulex Ceratophyllus Fasciatus* (the common rat flea of North Europe). The result of the experiments were: (1) The rat flea conveys plague from animal to animal. (2) Of thirty-eight experiments with human flea, three were successful. (3) Of twenty-seven experiments with cat flea, none were successful. (4) In two experiments with *Pulex Ceratophyllus Fasciatus*, both were successful. * *

"Does the rat flea attack man? That has also been proved, and in laboratory experiments it will readily bite man. When very numerous, it will bite man even in the presence of its natural host. It has also been kept alive for more than three weeks by feeding it on man. Rat fleas were found on legs of men sent into rooms infected with them, and also when sent into houses in which plague had occurred. * * *

"This is exactly what happens to the rat flea in India. Its natural host, the rat, gets plague and dies. As soon as the rats die the fleas desert the body at once and for a short time remain in the holes of the houses and floors. As soon as they are starving, they seek a new host, which may be man or animal, bite him, or it, and convey the disease,

plague, to their new host. I have seen a whole village in India deserted of inhabitants and all the huts apparently empty, but really they are full of hungry, starving fleas, as their natural hosts, the rats, have all died of the disease. Woe betide the man that enters those huts and sleeps in them! * * *

"One of the most striking characteristics of plague once it has become endemic is its seasonal prevalence. At or about the same time it yearly reappears, rises, declines and disappears. In India the disease lies dormant during the winter months, but as spring comes on the disease appears and increases and is at its height during the months of March and April. In May the hot weather arrives, and the decline is then rapid and in most places the disease disappears till the next spring. This is the history in the Punjab in North India, in which province I have served all my service. What is the explanation of it? It is no doubt caused by the disease remaining latent in rats, which are now proved to suffer from chronic plague during the non-epidemic season. This chronic plague has only lately been made out, and the lesions in the chronic disease are always in circumscribed abscesses and the animals are not emaciated or sickly. Post-mortem examination revealed abdominal abscesses and cultures taken from these abscesses were inoculated and proved generally fatal to the animals inoculated. The rats that suffer from chronic plague were very few in Bombay, but numerous in the villages of the Punjab, and the position of their abscesses in the abdomen leads one to infer that they are infected through the intestine. * * *

"Plague bacilli are therefore unable to live a saphophytic existence and it is necessary for their propagation to live in the living tissues and blood of the rat. The nature of the disease bears this out: Plague is an acute septicemia. At first it generally enters by the lymphatic system, and nature's attempt to arrest it in the lymph glands is the cause of the bubo. In the later stage and in all fatal cases it becomes a general infection, and the bacilli are found in the blood and internal organs. * * *

"The future outlook and likelihood of the spread of the disease to Europe is a very serious problem. The disease in eleven years has spread through the whole of India and I have no doubt will next infect Afghanistan and Persia. These countries lie in the northwest frontier and are adjacent to Russia in Europe, and they are not likely to adopt more vigorous measures than have been done in India. Wherever the plague-carrying rat and its flea, the *Pulex Cheopis,* can travel and live the disease is sure to spread, and I believe it will reach Europe overland.

"The rat flea, *Pulex Cheopis,* has been found and is common in warm climates, but is rare in North Europe. The flea described in Sydney, Brisbane, and Australia, is similar to *Pulex Cheopis.* The same or similar flea is found in seaports of Italy and Marseilles. It is very common in South America, and has been found in Egypt and South Africa. I regret to say that the disease has attacked the United States, and San Francisco is now fighting to get rid of the disease, and I have no doubt that the *Pulex Cheopis* has been found on the rats of that city. (It has.—Editor.)

"The condition of affairs in the seaport of San Francisco must be similar to that existing in Sydney, which has suffered several infections by plague. * * *

"The value of rat destruction is doubtful. Reports from the Punjab are greatly in its favor, and it is being carried out vigorously. However, it was found in Tokyo in Japan, that the result after destroying four million rats was that the breeding rate increased as the struggle for existence amongst rats was relieved. A new suggestion, I believe of the Salvation Army, is to import a ship load of cats to India to kill rats."

SOME POINTS ON THE SYMPTOMS AND LOCALIZATION OF INTESTINAL OBSTRUCTION DUE TO CARCINOMATA, WITH REPORT ON FOUR CASES.*

By RAY LYMAN WILBUR, M. D., Stanford University, Cal.

In presenting the record of these cases, and the pathological specimens obtained from them, it is my intention to touch only upon the features of each that seem pertinent to diagnosis. They all offer, at some stage, symptoms of partial occlusion of the lumen of the intestine. The fact that in one case no recognition of this condition, even when multiple partial stenotic areas were present in the small intestine was made prior to autopsy first interested me in the subject, and I have gathered these cases together as illustrative of stenosis in different parts of the bowel. It is with the hope of calling your attention to a few of the salient points that should be kept in mind in such conditions that I bring these histories and specimens before you.

Case I. Gelatinous Carcinoma of Appendix and Peritoneum. History. Woman, a teacher, age between 33 and 37 years. Seven years ago, while in Great Britain, had a very grave abdominal illness, called "inflammation of the bowels," accompanied by great pain and fever. After six weeks, a gradual recovery took place, and in one year she was ordinarily well. Four years ago I saw her in an attack, with low fever, similar to the first but much milder, and found tenderness and muscular spasm over a mass the size of a small sausage in the lower right abdomen under McBurney's point. Because of fear of dense adhesions an immediate operation was not deemed wise or necessary. The attack soon subsided. The patient was seen several times afterwards for other illness, tonsillitis, etc., and complained of no pain or intestinal disturbance, but the mass was always present and somewhat tender. An operation was suggested, but declined. After two years' absence the patient returned from teaching country school, where she had walked a long distance each day, complaining of pain and flatulence and noisy peristalsis, with frequent movements, which she ascribed to cascara, taken for constipation. A similar attack occurred three months before, but subsided after two weeks, leaving her well and with no bowel disturbance. She desired to know whether the condi-

*Read before the California Academy of Medicine.

tion of her appendix would be a bar to matrimony. Examination showed a somewhat protuberant abdomen, with thick fatty walls, dull on mueh of the right side, with a hard tender mass apparently as large around as a bologna sausage and about four or five inches long, lying under McBurney's point in the direction of the usual incision for removing the appendix. Because of the apparently quiescent condition and of the desire to marry, with probable pregnancy, an operation was advised. She seemed to be in good health, had gained in weight and felt unusually well except for the pain and diarrhea.

Diagnosis. The diagnosis made was that of an old appendicular abscess with thick adhesions. The pain complained of was thought to be due to some of these adhesions interfering with proper bowel action. No satisfactory explanation for the dullness in the right side was made prior to operation. After admission to the hospital, the administration of a cathartic and the use of an enema brought away a copious and apparently normal stool free from mucus. Operation was performed January 6, 1907, by Dr. I. M. Williams and myself.

Incision over the mass brought into view a thickened peritoneum with hard small calcareous and colloid masses imbedded in it and with numerous thickened adhesion bands extending in all directions. The whole extreme right side of the peritoneal cavity was cut off by adhesions into pockets or small cysts, filled with clear peritoneal fluid. As these pockets were broken up, the fluid, to the amount of a pint or more, was released, and after much dissection and ligation of vessels, the mass felt presented in the wound and was gradually worked to the surface. It was found to consist of the appendix greatly thickened and distended and filled with a broken down dark reddish-looking material apparently containing degenerated tissue and small cysts. There was no odor to the contents and no pus present. The cavity of the appendix was about three-fourths of an inch in diameter and four inches long, and there was a constriction near its base completely occluding it from the apparently normal caecum. A purse string suture was applied, the appendix ligated, cut off, and the stump easily invaginated into the caecum. Drainage was used when sewing up the incision, because of the fear that the contents of the appendix were not sterile and its friable wall had been ruptured in one place in removing it. The patient left the operating room in good condition, after a somewhat prolonged ether anesthesia. There was some vomiting and painful peristalsis, i. e., gas pains, was early established, but in about twelve hours she developed a severe ether pneumonia which caused her death thirty hours later. There was no evidence of acute peritonitis, but we were occasioned much distress an hour prior to her death by the passage of several ounces of dark bloody discharge from the rectum.

An abdominal autopsy was made through the incision. The site of operation was found free from evidences of bleeding or infection. After entering the general peritoneal cavity, which had not been seen at the time of operation, and which contained about one pint of clear fluid, the whole peritoneum was found studded with colloid like growths up to the size of a hazelnut. The omentum was somewhat thickened and while covered with small masses of various sizes was not retracted. In about fourteen or fifteen places annular growths were found on the small intestine. In some cases these had restricted the lumen to the size of a slate pencil. The bloody rectal discharge evidently came from the ulcerated inner surface of some of these growths. The serosa was apparently the only part involved, and the mesentery was not much affected. The following pathological report was made on the appendix by Dr. Ophuls:

Appendix extremely enlarged—about 12x4 centimeters; wall very thick, infiltrated with gelatinous material; lumen distended and filled with dark, pulpy blood-stained detritus. The cavity of the appendix was completely shut off from the caecum. Sections of the appendix show all through the wall large spaces filled with mucus and large epithelial cells. Diagnosis: carcinoma (gelatinous) of the appendix."

In reviewing this case there is some excuse for not making a preoperative diagnosis—the rarity of carcinomatous growths of the appendix and of the small bowel, the absence of anemia, the increasing weight and the history and findings, casually considered, all pointed toward the diagnosis made, but had the lesion found been suspected, a more correct interpretation could have been reached. The history of alternating constipation or regular bowel action with diarrhea and colic, the noisy peristalsis, the dullness of the right flank, the somewhat protuberant abdomen, might well have been used for some other explanation than that of adhesions interfering with normal bowel action.

This case illustrates some of the difficulties of diagnosticating small bowel stenosis even when multiple annular growths are present and also the tolerance of the small intestine to such anatomical disturbances.

Case II. Carcinoma of Duodenum. Woman, age 51 years, a steamstress. First seen May, 1906. Complains of distress and eructations after meals, thirst, increased appetite, constipation, is very nervous, and has been working hard. Weight is stationary; urine normal. Examination shows a somewhat prolapsed stomach with hyperchlorhydria (about 85 to 95). After lavage, careful dieting, rest and laxatives she reports herself on August 2, 1906, as feeling very well and free from distress. She returned to her home in San Francisco and began work and was not seen again until February, 1907, six months later. Then she reported that for three months she had been feeling badly; had lost her appetite, had a distaste for meat, had severe pain in the abdomen at times, particularly in the right hypochondrium and had marked constipation. There was considerable belching, but no vomiting. The stomach was found markedly dilated, extending almost to the pelvis, and in its contents after Ewald test meal there was free HCl. and lactic acid present, with a total acidity of about 85. Visible gastric peristalsis was noted. On the right side of the abdomen below the liver there was tenderness and marked muscular spasm, but no dullness or mass was to be made out. The urine was scanty, contained a small amount of bile and albumen with casts, but no sugar. A slight icterus soon developed and became more intense as time went by. The stomach was washed each night and morning, and would be found in the morning to contain from one-half to two pints of acid bile-stained liquid containing quantities of mucus. The last flow from the tube was usually pure bile. No alkaline pancreatic juice was detected. The stools became clay-colored.

A diagnosis of carcinoma of the middle or lower portion of the duodenum was made, and it was suspected to have developed on the site of a duodenal ulcer caused by the intense hyperchlorhydria. At no time was there distension of the abdomen indicating obstruction low down in the gut.

The patient gradually grew weaker, refused all food except liquids, vomited when sufficient lavage was not practiced, and passed quantities of bile by the stomach. No form of operation was consented to or strongly advised. There was marked pain when solid food was taken, and the bowels soon became obstinately constipated. The patient

died from starvation, after being under observation for a month. By common consent no food was taken the last week, no pain was present, no hemorrhage occurred. No blood was found at any time, when the stools or stomach contents were examined, but one dark-colored stool was passed, which was not saved, and it probably contained blood. An abdominal autopsy showed a small carcinomatous growth almost completely occluding the middle portion of the duodenum, with a small ulcerated area in the region of the opening of the gall duct. The gall duct was markedly dilated, but the gall bladder was only moderately distended and free from stones. The stomach was much enlarged, reaching to the pelvis, and the pyloric valve could not be made out. Except for the moderate inflammatory condition of the kidneys, the other abdominal organs seemed normal.

The diagnosis here from pyloric carcinoma, impacted gall stone in the duodenum, enlarged retroperitoneal glands, carcinoma of the head of the pancreas, and gall stones with infection and adhesions was comparatively easy, and was based on the history, the evident obstruction, the jaundice, the absence of glycosuria, the hyperchlorhydria, the quantities of bilious fluid in the stomach, particularly soon after lavage, the spasm of resistance over the duodenal region, although a definite tumor was not felt. In spite of the rarity of duodenal cancer its diagnosis need not be difficult, if below or in the papillary region.

The diagnosis of suprapapillary involvement could hardly be distinguished from pyloric carcinoma. In this case the site of origin of the growth was evidently near the papilla and gradually extended to it and caused its obstruction, making the picture presented a clear one as the symptoms were unfolded.

Case III. Scirrhus Carcinoma of Rectum, Colon and Ileocaecal Valve. Woman, housewife, age 62 years. First seen in May, 1906, for constipation and marked loss in weight. The bowels would be very obstinate until a small amount of cathartic drug was taken, and then they would run off very freely for several days. She had no pain, except after ingestion of fruit skins or laxative drugs, no tenesmus, no haemorrhoids, no blood in stools, but at times had noticed mucus. Appetite was fair, tongue coated, sleep disturbed at times by a noisy peristalsis. Carcinoma of the rectum was suspected, and a rectal examination showed a hard mass causing an annular constriction about three inches from the anal margin. There was no ulceration, and only moderate tenderness, and a 26 F. rubber catheter passed the obstruction readily. Careful abdominal examination revealed a large hardened mass in the right iliac region extending from the anterior superior spine towards the umbilicus and boggy nonsensitive lumps along the whole course of the colon. Visible peristalsis could readily be elicited in the small bowel by rubbing the abdomen. The stomach and other abdominal organs seemed normal. A small nodular growth the size of a large bean was found on the finger of one hand. This occurrence of a small peripheral growth is a condition I have noticed several times in malignant disease of the bowel. After several injections of olive oil beyond the rectal stenosis a considerable amount of saturated solution of magnesium sulphate was given by rectum and followed later by mouth, and a large pailful of fluid fecal matter and mucus was passed. Abdominal examination now brought out still the mass extending towards the umbilicus, but the colon seemed empty except for small lumps and hard areas in two places in the transverse colon and low down above the rectal stenosis. Multiple stenosis of the colon and carcinoma of the ileocaecal valve was diagnosed, the latter because of the visible small bowel peristalsis and persistent sausage-shaped mass in right iliac region.

The urine was normal, there was no jaundice, no vomiting. A strict liquid diet was well borne, if enemas were used to empty the bowel, but a small amount of laxative or fruit caused a diarrhea of two or three days' duration, accompanied by much pain and flatulence. The patient's condition was explained to her, with the possibilities of relief by operation, which she declined. After some weeks of liquid diet with gradually increasing difficulty of emptying the bowel and progressive loss of strength and weight, she sent for me one morning two months after I had begun the treatment of her case, arranged some final matters, told me that she wanted me to perform an autopsy after her death and see if I was right in my diagnosis, turned over in bed and refused to eat or talk, and died one week later. Autopsy revealed a hard scirrhus carcinoma of the rectum without ulceration and multiple growths in the colon, two of them reducing the size of the lumen of the transverse colon to about that of a lead pencil. The ileocaecal valve was the seat of a hard scirrhus growth and its caliber was much reduced and a hardened fecal mass was found in the ileum just above the valve. The liver was not involved, and no secondary growth except the one on the finger was noticed.

Here again the diagnosis of multiple stenosis of the bowel is comparatively easy. The history, loss in weight, spurious diarrhoea, mucus in stools, the abdominal and rectal findings all pointed not only to a stenosis but also permitted of fairly exact localization.

Case IV. Gastric Carcinoma with Peritoneal Carcinomatatis. A gardener, age 55 years. Was called to the patient by a neighbor who found him shrieking with abdominal pain. I found him lying face down across the bed with his stomach pressed against a pillow. He gave a history of having never been sick until six weeks before, when, following the "grip," his stomach began to pain him and he was unable to eat any food except liquids and toast. He had been under the care of a physician for a few days previous to my first visit, and had been given some laxative and a pepsin combination. The abdominal pain had been gradually getting worse for several days until it had become unbearable. The patient was a large, powerful, apparently healthy man who had not lost in weight. The temperature and pulse were normal. The abdomen was found somewhat distended, but not tender to pressure except over a small area just above the umbilicus. The liver dullness was normal. Loud peristalsis could be heard, but the bowels had not moved for several days. A provisional diagnosis of severe constipation with a possible perforated gastric ulcer was made. Considerable morphine wad required to relieve the pain. A milk and molasses high enema brought away several quarts of fecal matter with marked relief, and the patient felt so well that he insisted upon getting up and around for two days, when he had a return of the pain and was sent to the hospital. The abdominal condition was found as before, the temperature normal, but the pulse had gone up to 100. Pain was very severe and constant. Marked spasm of the recti above the umbilicus was present, and a very sensitive area about one inch wide extending from one and one-half inches above the umbilicus to the right and then directly downward to the level of the umbilicus, and one inch from it was noted. Loud peristalsis could be heard, although the bowels were obsti-

nately constipated. A diagnosis of local peritonitis from gastric ulceration was made and adhesion interfering with bowel action was suspected. Any form of operation was declined. The patient complained bitterly of a constant heavy feeling in the abdomen. Some relief would occasionally be experienced if gas could be passed per rectum, which took place rarely, or if belching would take place. The pain was felt most just above the umbilicus, although occasionally directly under the sternum. There was no pain or tenderness along the spine. The supraclavicular glands were not swollen, and there was at no time edema of the ankles. Liquid food was taken, but its ingestion was followed by immediate pain. The stomach tube was resolutely declined until a few days later, when he began to vomit, when it was passed once and the stomach washed out, but it caused so much distress that it could not be repeated. The washings contained masses of dark colored mucus, which reacted positively to the guaiac test for blood pigment. The vomitus of the patient consisted at first of the food taken, mixed with mucus, and it contained lactic acid and some free HCl. No blood was found. The patient began to fail rapidly in strength and weight, to have increasing difficulty with constipation, to vomit more and to have constant pain or heaviness in the abdomen. A loop of bowel became distended with gas and stood out clearly on the left side of the abdomen. A gastric carcinoma with peritonitis at its base was now diagnosed. A week later dark-reddish fluid giving a positive guaiac test was vomited. A small bowel movement of almost pure pus and mucus was passed, and after it the bowels moved more freely. The distension of the abdomen became more marked, and there was flatness on both flanks and the lower portion. The kidneys continued to secrete a small amount of normal urine. The breath became very foul. Large amounts of morphin were required to give any comfort. The patient began to hiccough, the fluid increased in the abdomen, there was occasional vomiting of very foul smelling, bloody fluid, and only two weeks after the patient was first seen and eight weeks after first symptoms complained of, he died, apparently from exhaustion. Upon autopsy, the body, except for the abdomen, was that of a healthy, powerful man. The peritoneal cavity contained about two gallons of clear fluid. The omentum and mesentery were thickened and retracted and the peritoneal surface was studded throughout with small masses from a pin-head size to that of a half pea. The transverse colon was attached to the stomach and the whole colon filled with dark blood. The small intestine was distended with gas, but contained no blood. Upon opening the stomach a foul round ulcerating area about two inches by two inches upon a thick carcinomatous base was found. Adhesion bands extended in various directions in the peritoneal cavity and the bowel seemed encroached upon by some of these, but careful examination did not determine any point of marked obstruction, and I do not know whether the constipation noted was due to adhesions, to the abscess from which pus drained, or to peritonitis. Apparently death was hastened by the loss of the blood found in the large bowel. The pus obtained at one time from the stool was probably from a small abscess rupturing into the colon, as it was not admixed with fecal material.

In this case, while there was some evidence of intestinal obstruction, at no time was malignant growth of the bowel itself suspected, the symptoms and signs pointing to the stomach and peritoneum.

In looking at all four cases together it is clear that a fairly correct diagnosis of the causes and location of the disease was made in three cases, where there was some bowel obstruction, but in the one with multiple growths of the small intestine it was not even suspected. Here the abdominal wall was thick and fat and no tumor mass large or small was felt except that of the appendix, and all attention was directed to that.

The differentiation of chronic bowel stenosis or occlusion due to new growth and the interference with peristalsis in chronic peritonitis is full of interest, and in distinguishing the two, where no tumor mass is found, after examining all possible hernial openings and the rectum we should seek for visible peristalsis as a sign of occlusion and pronounced tenderness on pressure as indicative of peritonitis. The chronic stenosis and obstruction are readily separated from the acute by the irregular symptoms, moderate abdominal pain, slight vomiting, history of constipation and spurious diarrhea, the loud gurgling intestinal sounds, the history of coated tongue, and normal temperature, and usual uneven distension of the abdomen of the chronic form and the more violent pain, severe vomiting, and collapse generally present in the acute form.

From the cases reported it would seem evident that the localization of some of the growths of the intestine is possible, particularly if in the rectum or lower part of the duodenum. In diagnosing stenosis of the small bowel a few points are helpful. Rectal irrigation will often empty the colon, and with remaining abdominal distension and changes in shape of abdomen from distended loops of intestine will often point to the small bowel as the seat of obstruction. Pain is such a common functional symptom that unless it is constantly felt by the patient and tender to pressure at a given point it is not of much value, although it usually comes earlier as a symptom of small bowel involvement than of large. Indicanuria has been urged as more indicative of small bowel stenosis than of large, when present in a suspected case. Examination of the stool, aside from the presence of bile, can be of little value in localizing the point and cause of obstruction, but of course the presence of blood and mucus may throw light on the case in general. Vomiting is usually more violent and severe and more readily stercoraceous in small intestinal occlusion than in large. But the symptoms are so interchangeable and variable that the accurate localization and cause of a chronic stenosis of the bowel, except in the rectum and duodenum, is probably, as Nothnagel has said, the most difficult task of anatomic diagnosis.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT SURGEONS.

THE TREATMENT OF SYPHILIS OF THE EAR.

By M. W. FREDRICK, M. D., San Francisco.

In marked contrast to the large number of cases of syphilis occurring in the practice of eye, nose and throat diseases the number of ear affections traceable to syphilis is very small. In fact, some of the older writers were emphatic in the statement that lesions

characteristic of syphilis are never observed in the middle ear or tympanic membrane. The whole subject of syphilis of the ear was, until recently, treated in a very superficial manner in the text books, only a few pages being devoted to it, and some of the books entirely ignoring the involvement of the ear in congenital syphilis. The journals rarely contained anything on the subject. Of late, however, a change has taken place, and both in the journals and text books the subject is receiving the attention which it so well deserves. There is no doubt in my mind that if the attention of the physicians were called to this topic the number of cases observed and recorded would be far greater than at present.

Beginning with acquired syphilis I shall not devote any time to the affections of the external ear, as these belong to the realm of dermatology. I wish to mention only that broad condylomata of the external canal occur in a small number of cases and may be mistaken for furuncles; or, when they assume the appearance of the reddish, wart-like excrescences so often seen about the anus, they may be mistaken for granulations due to carious bone in or about the middle ear. As a rule there are other syphilitic manifestations to help establish the diagnosis, and the treatment consists, aside from the constitutional treatment, in the removal of the excrescences, either by snaring or abscission, and touching with silver nitrate; or in dusting in calomel, iodoform, washing with weak solution of silver nitrate or other adstringents. Syphilitic ulcers of the canal, an extremely rare condition, may be mistaken for broken down furuncles, a mistake against which the swelling of the neighboring glands should be a safeguard.

The only primary sore which I will speak of is the one having its seat at the pharyngeal mouth of the eustachian tube. This chancre was not of infrequent occurrence formerly, but now occurs much less often. The greater care taken to keep our instruments aseptic, and the practice of many otologists to reserve a catheter for each patient, has made this regrettable accident a rarity. The site of the lesion makes it difficult of detection and treatment. As a rule the swelling of the glands is what draws attention to the lesion. The treatment consists in cleansing the sore by sprays through the nose or used postnasally, insufflation of iodol or iodoform, and in touching with acid nitrate of mercury or other caustics, should the sore be indolent. As a rule there is no pain attached to this lesion.

Mucous patches and ulcers resulting from their breaking down are not uncommon around the mouth of the eustachian tube, and the pain from these is often severe, giving rise to so-called neuralgia of the middle ear. The ear in these cases often presents a normal appearance, hence the use of the term neuralgia, a poor subterfuge to conceal ignorance. Local anesthetics applied to the pharygeal lesions will stop the pain in the ear; cocain, eucain, gargles with potassium bromide or antipyrin are amongst the best things to be used in this direction. For the healing of these lesions cleansing with sprays, the topical application of weak solutions of corrosive sublimate of silver nitrate, and inflation of the middle ear are the means to be used.

Much more intense than in the preceding cases is the pain in ear and head due to broken down gummata in the region of the tubal mouth, and I have known patients to be treated with all sorts of anti-neuralgic remedies when an examination with the rhinoscopic mirror would have revealed the seat of the trouble. The treatment of these ulcers is much the same as that of the more shallow variety of the secondary stage, but the potassium preparations, either by mouth or by injection, should be pushed vigorously.

The local treatment of the catarrhal affections of the middle ear is much the same as that in the non-syphilitic cases. The difference between the non-syphilitic and the syphilitic forms lies in the fact that in the latter there is an early implication of the inner ear, so that we have to resort to energetic anti-syphilitic treatment; mercury either in the form of inunction or injections, potassium iodid, and sweating with pilocarpin. On the whole it will be found, however, that the prognosis in the chronic catarrhal inflammations of the middle ear due to syphilis is worse than in the ordinary forms, and that is, unfortunately, bad enough.

While purulent inflammation of the middle ear due to syphilis has been seen by few and denied by many, there is no doubt in my mind that in time we shall come to recognize this condition more frequently than we do at present. There is no good reason to assume that syphilitic affections should act differently in spreading up the eustachian tube from what other inflammatory purulent conditions of the pharynx do. One distinguishing feature of this purulent otitis media is the occurrence of a second perforation in the drum membrane without any pressure behind the drum. This process Buck compares to the melting process seen in the soft palate. It is as a sequela to this purulent otitis media that we encounter the ulcers and condylomata of the external canal already mentioned. Necrosis of the bone occurs with about the same frequency in this condition as in the non-syphilitic variety.

The local treatment is, again, the same as that in non-syphilitic cases. Cleanliness, removal of granulations, the use of antiseptic powders, and of astringents in the later stages, will effect a cure if begun early and if the patient is in otherwise reasonably sound health, or can be put in that condition by the use of tonics and feeding. The anti-syphilitic treatment should be early and energetic for the reason already pointed out.

The affections of the innear ear often come on very suddenly, and again are insidious. When the onset is sudden a vigorous antiluetic treatment will often restore the hearing. One should not hesitate to use large doses, and the use of pilocarpin to produce profuse sweating is one of the aids towards restoration of function. The subcutaneous injection of 4 to 12 drops of a 2% solution pilocarpin muriate every day for a week is the prescription given by Politzer.

When the onset is slow the prognosis is extremely

bad, and therapy of any kind is of little avail. However, a vigorous anti-syphilitic treatment, combined with a generous diet and tonics, is worth trying, although nothing can be promised. In subjects who have not had any anti-syphilitic treatment for a long time, and in those who were insufficiently treated at the outset, one can often accomplish more in these late stages by the use of mercury than by the use of the iodides. In using inunctions I have of late given preference to the ointment made with vasogen, as I think it is absorbed best in that vehicle, and is much neater than the ordinary gray ointment. The syrup of hydriodic acid is a very agreeable way of exhibiting iodid, but I rather prefer in cases calling for vigorous treatment the old solution of potassium iodid.

In congenital syphilis diseases of the middle ear are not uncommon, and have nothing to distinguish them from the same conditions in children. Death often intervenes from marasmus before the local condition can be improved. The constitutional treatment consists, according to Hutchinson, in the rubbing of mercurial ointment into the soles and palms, no other remedy being of value.

Between the ages of 5 and 25, after a parynchematous keratitis or a painless swelling of a joint, the hearing is often suddenly lost. In some of these cases there had been a gradual diminution in hearing preceding this sudden deafness. In these cases treatment, as a rule, avails nothing. The only hope of betterment lies in putting the patient to bed and inducing ptyalism as soon as possible. Flyblisters behind the ears, blowing iodin vapors into the tympanic cavity, scruple doses of hydrochlorate of ammonia (Hinton), have been tried with little or no results.

DISCUSSION.

Dr. D. W. Montgomery: The treatment of syphilis is always an interesting subject, and more especially so when it involves such important organs as the eye and the ear. I see very few of these cases, excepting as iritis and keratitis occuring as an incident during syphilis in the secondary stage. I recall now a very interesting case of syphilis affecting the internal ear seen with Dr. Barkan and Dr. Richter, and some time previous to that I had under my charge in the San Francisco Polyclinic an interesting case of Meniere's disease, occuring during the course of early constitutional syphilis. For a long time he could hardly make his way along the streets because of dizziness, but finally he became entirely well so as to be able to walk with security on an elevated narrow pathway.

The late Dr. J. F. Morse used frequently to insist on the importance of elimination in the treatment of syphilis. I do not think there is any doubt of the importance of this. In using either of the specifics for syphilis the mode of introduction of the drug is important, but the mode and the facility of its exit is equally important. The elimination of the drug being of such weight, much circumspection should be exercised in coincidently using a remedy like opium that interferes with elimination. I rarely use either opium or morphin when giving mercury. And this is a point that brings into relief Dr. Fredrick's remarks in regard to pilocarpin. I should think that pilocarpin might act favorably in the treatment of syphilis, because of its sudorific effect. Hot baths have long been advised in syphilis, and probably their beneficial influence is also due to their causing free sweating and so effecting elimination.

As for the form in which mercury should be given, I think mercurial inunctions is easily the best. During a trip I took last summer I rarely heard inunctions mentioned in any of the clinics visited. One could frequently see, however, the dark stains of this treatment on the patient's skin. On the other hand, I heard a good deal about atoxyl as given for syphilis. Inunctions were so self-evidently good and so well tried out that no one needed to speak of them, while on the other hand atoxyl was new and had the freshness of novelty, even though on trial it might prove to be of little value.

As for intramuscular injections, I saw the sozoiodolate of mercury used only in one clinic during my trip, and I don't think it has any particular value over other preparations of mercury. The salicylate of mercury is a great favorite as an intramuscular injection, and it certainly acts wonderfully well. Gray oil I rarely use, and calomel is atrociously painful. Bichloride of mercury injections are good, but frequently leave marked and long enduring indurations. I saw a woman a short time ago whom I had treated about five years previously with bichloride of mercury injections. She was under my care for about one year, taking three injections a week. Her buttocks are still dimpled with deep cicatricial contractions as a result of this treatment.

In conclusion, I don't think I can insist too much on elimination as a factor in the treatment of syphilis. I do not wish to be misunderstood in regard to my attitude about giving mercury by the mouth. Without wishing in the least to minimize the excellencies of the inunction method or the methods by intramuscular or intravenous injection, the method of giving mercury by the mouth has its advantages, among them its convenience. It is also effective for the only two cases of syphilitic reinfection that I have ever seen were in men who had been long and steadily treated in the early stages of their first attack by protoiodid of mercury pills given by the mouth. That these men had been infected with syphilis many years previously for the infection for which I attended them admits of no doubt, as in both instances the previous infection had been diagnosed by men of world-wide reputation. To my mind, when a man has so far lost all traces of his disease as even to have lost his immunity against a second attack, it is evident that he should be considered as having been cured from his first attack.

Dr. Garceau: In coming here tonight I feel a little embarrassed, as this is a field far from that of the dermatologist. The work of the dermatologist comes largely under secondary and tertiary cutaneous manifestations of syphilis. In looking over some literature this afternoon I came across a paper on the treatment of syphilis recently published by Dr. George Pernet of London covering the field very widely, and I picked out one of his opening sentences. "If there is a disease about the treatment of which there is a fascinating divergence of opinion, it is syphilis. Ideas and methods regarding this disease vary from not only medical man to medical man, but also from country to country. About one thing every one appears to be quite sure, however, namely, that he knows how to treat syphilis better than any one else." To speak generally on the general treatment of syphilis from the primary, secondary and tertiary forms would occupy a large volume. I think we are all prone to adopt such a method as in our experience over a number of years, or the experience of others, has seemed to give the best results. This divergence of opinion has made me an eclectic. I do not deny that any treatment of syphilis which will destroy the accumulation of spirochatae is a justifiable one, but we must treat the patient from an individual stand-

point, taking into consideration age, weight, occupation, nationality, sex, etc. I agree with Dr. Montgomery that elimination is one of the first principles in the treatment of syphilis. Not only elimination, but also the care of the nervous system. It would be too wide a subject for me to cover tonight about the preference for individual drug. You get all the elimination you desire in the internal administration of mercury. In the treatment of any syphilitic manifestation, I prefer the intermuscular injections of the soluble salts, and my choice is the one per cent solution of the sozoiodolate as prepared by Lenfeld. I have had only one occasion to resort to anything else, and that was in a case of an intense gumma of the brain, and then I did use the Gray oil most effectively. I want to emphasize in closing that experience teaches us all to treat syphilitics from an individual standpoint. Mercury and iodid of potassium, or mercury in any form or iodid of potassium administered in any form whatever have their beneficial effect. Choice of these remedies is gained by experience and knowledge only.

Dr. Krotoszyner: If it is true that there exist many opinions in this society about the treatment of syphilis, it is also true (and I state this fact with some gratification) that the authors of the various papers agree on one point, i. e., the main remedy in the treatment of syphilis is mercury. There only seems to be some divergence of opinion in what manner the drug should be introduced. Right here I wish to state that I am glad to learn from your papers that the internal application of mercury as the only means of treatment is more or less abandoned. For the exclusive internal treatment is only useful in mild cases, while in graver cases of syphilis this mode of treatment has proven to be entirely inefficient. Like Dr. Montgomery, I think our main standby are the inunctions which, if used properly and energetically, will in the great majority of instances give the desired curative results. I insist that well-trained maseurs be employed in applying the inunctions, for I have seen that patients, in the majority of instances, will apply the inunctions carelessly and not spend the necessary time for thorough mercurialization of the skin. In other words, you cannot consistently speak of an inunction cure lege artis unless you are convinced that the inunctions are properly applied. You will see that the majority of European syphilologists favor inunctions, for they generally see good results with this mode of treatment, if properly applied.

I have also had a long experience with soluble mercury salts, especially the bichlorid. I generally inject 1 cc. of a one per cent solution daily, or if the patients cannot come to the office daily I give 1 cc. of a 2 per cent solution every other day. If the patient can stand it (because the bichlorid injections of higher percentage are often very painful) I inject 25 drops of a two per cent solution twice a week. I have noticed that women complain less of pain caused by the bichlorid injections than men. It is possible, though, that this may be due to the fact that inunctions are particularly distasteful to women.

Some ten or fifteen years ago I treated a great many of my patients with the insoluble salts of mercury, especially calomel and salicylate of mercury. The injections, though, are very painful, occasionally an abscess will be noticed, and in a few instances I observed, like others, a severe stomatitis after a repeated calomel injection. Therefore I have more or less abandoned this mode of treatment for the routine work in favor of the sublimate injections which have given me very satisfactory results during the last ten years.

Dr. Kaspar Pischel: Since we have with us tonight men of great experience, I cannot let this opportunity pass without asking some questions for personal information.

How reliable is the diagnosis of syphilis through the use of serum and through the examination for spirochetae?

While Dr. Montgomery has told us that inunctions are the most effective treatment, is it the quickest, or can we get quicker results by intravenous or intramuscular injections? Have any experiments been made in that line? How long should the treatment be continued? When may a man be allowed to marry? What is the difference and what is preferable, potassium iodid, sodium iodid or hydriodic acid?

Dr. Welty: In a discussion of this kind it is very important to know if you are dealing with primary, secondary, or tertiary, manifestations. Practically all of my cases are of the latter. And, according to the recent teachings that I am familiar with, iodid of potassium is the drug on which I have placed reliance, and all of the cases except one have yielded. This case had extensive tertiary syphilis of the larnyx, and it did not yield to this form of treatment, nor did it yield to mercury given by mouth.

Acute syphilis of the ear which comes with secondary affection is amenable to treatment as the doctor has stated, but I have yet to see the case of tertiary manifestations of the labyrinth that has been benefited at all by the administration of mercury or iodid of potassium.

I have never seen a primary, secondary or tertiary affection of the tube. I know it must be very rare. I had two cases of gumma of the septum, that were partially broken down. Iodid of potassium was administered for two weeks, and the case has entirely recovered. In another case of syphilitic granulomata on the floor of the nose, side of the septum and part of the inferior turbinate, after two weeks' administration of the iodid of potassium the granulation was entirely gone.

Another case of syphilis of the larnyx was diagnosed by the healed tertiary affections that had preceded and by the characteristic appearance of the lesions on the vocal cords. This patient could not speak above a whisper when I first saw her. She was given iodide of potassium and inside of ten days she was talking. However, the voice was husky. This huskiness has almost entirely disappeared at the present time, which is about three weeks from the first time I saw her.

In syphilitic gumma of the brain or cord, I have no doubt that the mixed treatment or a concentrated solution of mercury given hypodermically will yield the best results. A decided impression must be made upon the gumma in a very short time, or you will have a pathological degeneration.

Dr. Martin: I feel safe in saying that there is no prescription used so frequently in the treatment of syphilitic affections of the eye, nose and throat as the combination of iodid of potassium and bichlodid of mercury. Teritiary conditions with which we have mostly to deal in these regions as a rule clear up very quickly under this treatment; but I hardly think that the specialist believes that he has effected a cure of other than the local manifestations. When the lesion is deep seated, affecting the optic nerve, retina or choroid, I depend on the use of inunctions followed by a course of pilocarpin sweats as recommended by Burnham of Toronto. For this method of treatment the patient should be under the eye of the physician and in a sanitarium.

Dr. Barkan: As much as we have learned, it strikes me that one point might be made to good advantage, and that is with regard to the relative value of mercurial treatment and that with iodid of potassium. I have long felt that we must rely on mercurial inunctions as the chief agent not only

in the early forms of the disease, but also in the late forms, and I was much pleased to come across an article published lately by Prof. Zeisl, who makes much of that very point. He maintains that mercury is as efficient in the very late forms of syphilis as in the early forms. He strongly advises combining both the mercury treatment and the treatment with iodid of potassium from the first and carrying it out to the last. I was pleased to know the opinion of a man as he, for I have met with very interesting results in trying to treat these cases of the late forms of the disease, and have succeeded well in forcing the mercurial treatment together with iodid of potassium. Another point which I would like to suggest is that of the application of Zittmann's decoction in the old forms of specific eye affections. An old gentleman who had treated for specific irido-choroidoretinitis in the South with large doses of iodid of potassium did not progress and came up here. I sent him to the hospital, where he was put upon inunctions and daily pilocarpin sweats for four weeks. Yet he did not improve materially until in the fifth or sixth week he commenced drinking Zittmann's decoction, and his sight recovered within about three months entirely. I consider this due to the changing of the condition of the blood and eliminating the syphilitic virus. Zeisl, I will mention again, advises also the hydro-therapy and finally suggests the saodine in preference to the iodid of potassium, for it has no odor and no taste, and produces but rarely the general symptoms of iodin. The case of specific labyrinthitis to which Dr. Montgomery refers was indeed a very interesting one. The woman was about thirty-five. She had been under my care previously for some little ear trouble. This time I was called in to ascertain the significance of a symptom which was quite striking. The patient, soon after going down the chutes one day, suffered from vertigo, noise in her ears and deafness, and became quite prostrated. There was some doubt as to the diagnosis, as the skin lesion pointing to syphilis was rather slight. Inspection of the ear revealed normal conditions. In addition to the deafness and the vertigo present, the diagnosis of specific labyrinthitis was made because of her inability to hear the vibrations of high pitched tuning forks. The last symptom prompted me to believe the trouble to be an acute specific labyrinthian condition. We submitted her to inunctions and pilocarpin sweats, and she had a quick and satisfactory recovery.

Dr. Louis C. Deane: I think I can speak for every member of this society that we are not only honored but pleased at the presence tonight of so many visitors. They are men who have made a life study of syphilis and its treatment, and we have all profited by the remarks heard here tonight. Their remarks have constituted primarily the general treatment of syphilis. I will say for our visitors that I am sure that they have also come to learn something from us with regard to syphilis of the eye.

There is hardly an organ of the body that is more interesting than the eye from a syphilitic pathological standpoint. We have here an organ composed of tissues of the most diverse character, all subject to syphilitic manifestations, with the added advantage that these changes can be accurately observed during life. In the sclera we have a tissue composed of fibrous elements and entirely devoid of blood vessels; adjacent to it the choroid, a tunic composed entirely of blood vessels, and again in contact with it the retina, the most highly organized nervous tissue in the body; all so different in their composition and construction, yet all showing numerous and unmistakable forms of syphilis.

The anterior portions of the eye, such as the clear and bloodless cornea, with the mass of blood vessels and muscular tissue composing the iris and the ciliary processes so frequently participate in general syphilitic infection that manifestations here are quite the rule rather than the exception.

An oculist who has observed carefully the clinical and pathological changes in eye diseases has become, so to say, a syphilographer of no mean proportions.

Regarding local treatment for syphilis of the eye, one interesting exception to the therapy of general syphilis is to be noted; while opium or any of its derivatives are clearly contra-indicated as checking elimination, in the eye we have a morphin derivative in the form of dionine which acts in exactly a contrary way. It is one of the most active lymphagogues imaginable, and in a few minutes after its instillation in the eye, the tissues become markedly oedematous, the lymph thus extracted being gradually carried off by the circulation.

Subconjunctival injection of mercury as practised by Darier of Paris, though criticized by some, has stood the test of a number of years' practice, and the numerous favorable reports gives this method a firm stand as a valuable remedy. A misconception and improper technique in its use, I believe, has led many to abandon it as being too severe in its reaction. It was with much interest that I spent some five weeks with Darier and observed him practice this method in numerous cases. He uses a curved needle and thrusts it directly into the postocular tissue through the superior conjunctival fornix, not under the ocular conjunctiva, as generally practiced. The reaction is thus lessened. Mercury in the form of the cyanid he recommends for this purpose.

While speaking of Darier, I must also mention his intravenous injections of mercury. While not generally practiced, one leaves him with the impression that it is a method that more will be heard from in the future. He has used it thousands of times with apparently no untoward results as to the method of application, no pain following or localized areas to remind one in years to come of the injection. He places no importance upon the injection of air into the vein, never taking the trouble to remove it from the syringe.

As to the local application of the various mercurial ointments commonly used in eye diseases, it is hard to state their exact importance as a specific, as their effect upon some nonsyphilitic lesions is as pronounced. Suffice it to say that we rely upon them in syphilitic affections of the cornea and sclera, and whether they act as a local irritant and absorbent or as a mercurial specific, the results are in many cases most favorable.

When dusting calomel into the eye one is compelled to believe that it is the mercury that shows its influence, for other drugs similarly used have not proven as efficacious. It has been said that thiosinamine is to the eye, when applied locally in the form of a salve, what the iodides are when administered internally. This has been hailed with especial favor by the oculist as locally iodin remedies have not proven successful.

Dr. Nagel: I have been pleased to hear several syphilidologists speak so favorably of inunctions. It is certainly the stand taken by some of the foremost clinicians of Germany. It is largely the belief among ophthalmologists that in inunctions we are using the strongest absorbent at our command—irrespective of lues. I think I am correct in saying the former belief, that the intramuscular injections are more accurate, is largely looked upon as fallacious now. I think it is principally due to the want of measuring accurately how much Hg is eliminated that investigators have come to that conclusion. With regard to subconjunctival injections of mercurial solutions with a view for topical effects, I should like to remind the society that, according to experiments by Vogel at our clinic in Bern, Hg

does not enter the eye. So it seems but rational that such a mode has, as a matter of fact, largely been abandoned. One should also always remember the observation of Fuchs, i. e., that if such injections are made too close to the limbus we are apt to severely injure the cornea. Regarding subconjunctival injections of saline solutions, I should like to mention the method practiced during my service in Bern, consisting in doing a Keratomy along with the injection. It has been proved experimentally that the sudden depletion of the anterior chamber acts as a strong stimulant for nutritive changes in the uveal tract, and combining a keratomy with subconjunctival injections of saline solution we found to be a very efficient way of favorably influencing a number of graver fundus affections. The use of the guarded lance renders the operation safe and rather unimportant, with practically no risk of iris-prolaps or adhesions.

EVILS OF THE LODGE PRACTICE SYSTEM.*

By REXWALD BROWN, M. D., Santa Barbara, Cal.

Mr. President and Members of the Santa Barbara County Medical Society: It is far from my purpose tonight to introduce into my remarks anything of bitterness, or to condemn outright with rash statement that particular form of contract medical service known as lodge practise; the subject is too large a one to be viewed from but our standpoint, too complicated a one to be handled harshly. The medical profession is not yet a unit on the value or the perniciousness of lodge practice to society and to the profession. The condition as it exists today is, however, provocative of much discussion throughout the medical world, and efforts toward a solution are read of in almost every reputable medical journal. With constantly increasing volume the flow of opinion is reaching the conviction that the present system of lodge practice is, in the main, dangerous to lodge members and inimical to the welfare of the profession. This last statement expresses my convictions, and I hold to them as I hold to convictions in politics, in religion, in morals, without feeling of animosity toward those who differ with me.

In this age of the world, movement in the social fabric is toward association; most accomplishments, good or bad, affecting greater or lesser divisions of humanity, in the industrial, labor, financial, religious and purely social spheres, are maneuvered to completion through the force of many minds acting in unison. Mutual helpfulness is the guiding motive—the desideratum, the greatest good to the greatest number. This sounds utopian; it isn't though; the innate selfishness of man, singly and in the aggregate, does not suffer annihilation in the momentum of associate action; the conflict for self-aggrandizement, for power, for gain at the expense of others, finds expression within the very center of the charmed circle directing a movement, and the movement itself is scarce likely to take heed of individuals or other movements, which it is to its interests to use or to crush.

Fraternal orders, lodges, clubs, are expressions of our civilization today; they have been evolved from the social aspirations of man, and are associative movements directed primarily toward bringing congenial persons into closer contact for various purposes. In this country, except in very recent years, the chief aims appear to have been the promotion of bon comaraderie, healthful pleasure, intellectual gain, and the institution of financial benefits to members in need through sickness. As such, fraternal orders and lodges have been important factors in social and industrial life, and well deserve their integral part in the body politic.

At the present time, however, the chief aim of many fraternal orders appears to be the exploitation and control of physicians in the interests of the numerical and financial growth of the lodges, and mainly at the expense of the physicians. This, I realize, is a very radical statement, at which vehement exception might be taken, and I shall qualify it. I do not believe this status of affairs to have been intentionally born and fostered; it has been evolved from the sick benefit encumbrances of the lodges, and is altogether an expression of the manner in which expenses incurred by members through the onslaught of disease have been reduced to a minimum. The lodges have had in mind the best possible arrangements for the greatest possible number. The movement concerns itself but little with, and that to flatter, the interests which it uses, and sweeps on regardless, because blind to the dangers which beset its course. I am free to confess, however, that in view of so many lodges having been formed whose only aim appears to be to get medical services cheaply, that I believe unscrupulous men, taking keen advantage of conditions as they are, have found it to their financial advantage to organize lodges, using doctors' services as a magnet to gain members.

The above is an attempt explanatory of the involvement of the medical profession in lodge practise. I admit the explanation is a bit hazy. The problem which confronts us as medical men, however, is not the cause of the existence of the practice; we must concern ourselves with the evils manifested in the workings of the system. And here let me say it will avail us nothing to rail at the lodges for their introduction and management of this practice; they have merely grasped an opportunity. Nor should aught be said in scathing denunciation of the doctors who have lent and are lending their efforts in furtherance of the practice. Let us be just to them; they—most of them—believe fully in the propriety of the system, and in the real good to be accomplished through it. Also many physicians have made a fair competence through their lodge work and have rendered excellent service to patients. They have been and are honest in their convictions of an economic basis for the system.

Yet I think it can unqualifiedly be stated that physicians are wholly responsible for the development and maintenance of the lodge practice conditions as they exist today. As originally evolved and handled, the system seemed to promise well—there

* Read before the Santa Barbara County Medical Society, January 13, 1908.

was no spirit of cupidity in it—it promised good to the lodges, it promised good to the doctors, and to neither appeared aught of harm.

What is the clinical picture, as it were, of the situation today? Doctors in many instances have allowed themselves to underbid each other for the medical work of the lodges. How does this affect society, represented by the lodge? How is the medical profession affected thereby?

Medicine has ever been a respected calling, yea, even a noble one. It is a profession, an occupation devoted to service of the world—its aims are higher than mere livelihood. It is not a trade, making it competitor with other trades; its devotees assist each other as colleagues for the common good of humanity. Benefits to self are secondary matters. Is it not true, then, that bidding for lodge patients debauches the profession from its high position into the marts of trade, and makes financial income to self paramount to the service to be rendered? Truly the baneful spirit of our commercial age has tainted a noble calling.

What injuries does the individual doctor suffer through lodge practice—in what manner does he injure his professional brethren because of his acceptance of such work?

First: So small are the fees received—scarcely any lodge pays its doctor above two dollars a year for each member, and some lodges require the doctor for this sum to attend to all ailments, not only for the member, but also for each and every member of his family—that the doctor dependent on these alone is unable to afford proper equipment for his work, unable to travel at times to the centers of medical activity, nor is he able to buy journals and books that he may keep abreast of the advances in his profession.

Secondly: The dignity which should be his is stripped from his shoulders. He must constantly be in the fear of censure from the lodge through complaint of some member not pleased at his inability to respond as promptly as desired to a call. He is a slave to demands for attention on part of members day and night, for ailments, many of them too trivial to merit a physician's care; he must respond, however, because of terms of contract.

Thirdly: Being sure of his fees, the doctor as a rule examines his patients in a slighting and cursory manner; he knows full well extra attention to diagnosis and treatment in no way affects his compensation; he grows careless and his diagnostic acumen falls off; treatment follows snap shots or guesses. The doctor thus works grave injury to himself—study and self-improvement slough off.

Fourthly: The lodge physician is not hail fellow well met with his brother practitioners. They look upon him as having introduced ruinous cutting into a fair schedule of fees, which enables the profession to keep abreast of medical advancement, thereby assuring the public always the best in therapeusis.

Fifthly: The bitterness, the charges and counter charges, and the dissentions engendered between the lodge doctors and those not so engaged causes toward the profession a lessened feeling of respect from the public, and they grow skeptical that we have their real welfare at heart, and regard their bank accounts as of only minor consequence.

The members of the medical profession who do lodge practice suffer, therefore, most, perhaps, in their fall from professional tone and high ideals. What do the lodge members who receive the practise lose, or, perhaps better, fail to receive?

Because of the poor compensation they pay, the services rendered to them, as a rule, are of low grade. The careful, assiduous attention which they, as patients, expect from doctors, is withheld from them. The lodge doctor, commercially biased, when called into a case of sickness, shrugs his shoulders with the thought: "Well, it's only a lodge patient. I have been paid, or will be, regardless of any special attention I may give this man." He therefore does not exert himself; that sympathy which should flow to the patient from the doctor, that confidence which should be the patient's toward his physician, both are wanting, and the struggle for the mastery over disease is robbed of powerful weapons.

Lodges have made the serious mistake of rating all physicians in the same class as regards education, training, ability and earnestness, and they have believed that an ungraded type of services is furnished by all bearing the degree of M. D., and that these services should have ungraded compensation. Little do they appreciate how many lives have been jeopardized, how many weeks of unnecessary invalidism have been suffered with attendant evils to family and to society, through failure to recognize that merit counts as much and more in the handling of disease as in other phases of life. And merit which is knowledge is worth the extra cost.

Many lodges require their physicians to furnish medicines in addition to services. Other lodges have contracts with drug stores by which prescriptions are to be filled for members at a minimum rate, chargeable to the lodge. Both these plans work almost invariably an enormous harm to those who rely on their physician to offset disease through the medium of drugs. In the first instance patients, instead of receiving drugs applicable to their conditions, which, of course, the illy-paid doctor is unable to buy, are made the recipients of nostrums and proprietaries of all types, so kindly laid at various times by the road agents on the doctors' office desks. Thus the patient is duped, and the doctor is an unpaid agent in pushing the nostrum traffic.

In the second instance the druggist, if he receives but, let us say, twenty-five cents a prescription, is unable to make any money if the doctor writes prescriptions which overreach that limit. Consequently the doctor and the druggist, who as a rule are brothers, fraternally speaking, arrive at an agreement by which all prescriptions written allow the making of ten or fifteen cents on the twenty-five cent basis, in which profit often the doctor shares. Thus the confiding patient, perhaps needing medicine cosing a dollar or more, has foisted off on him something costing little to furnish, and maybe not at all beneficial to his condition. Graft in a petty

form, and in that form inimical to health, is thus a feature which has become introduced into the lodge practice system.

In view of the preceding, the lodge medical practice system is working grave injury to society and to the profession. Surely the evil must not be allowed to grow. The lodges as yet unappreciative of the dangers they are subjected to will certainly not make the first efforts to bring about a change. The solution rests with the medical profession. We have it in our power, at least in this country, to apply the needed remedy. This remedy is a simple one; it consists in the solidification of the profession in opposition to the practise.

I urge on every physician membership in the American Medical Association, whose aims are the safeguarding of individual and public health. Despite the carping and false statements constantly being hurled at this splendid organization from charlatans, quacks, dogmatists, faddists and malcontents, commercially biased, in the profession, to the effect that it is a medical trust, it is nevertheless true that the A. M. A. is directing its energies to the highest expression of service to mankind through a training for its members most comprehensive and rigid, asking in return fair compensation only, that it may have opportunity to ever increase the value of the service. Let each one of us, then, take our full part in the movement, and lodge practice which runs counter to these high desires must cease to exist.

In conclusion, let me say I have no quarrel with the many honest doctors, who, with strong convictions, have rendered and are rendering conscientious attention to lodge members under the lodge practise system. I have only been opposing a principle which to me appears radically wrong.

THE EARLY TREATMENT OF CROSS EYES.

By VARD H. HULEN, A. M., M. D., San Francisco.

A very large proportion of our profession continues to advise that the treatment of cross-eyed children be deferred until the patients are six or seven years of age. And it seems necessary to protest with all possible emphasis against the method of treatment pursued today by many of those practising ophthalmology when they place upon their little cross-eyed patients a pair of glasses with absolutely no further attention for months and years than to replace lenses broken or "outgrown." The parents have been told or allowed to infer that nothing further could be or should be done for the uncured squint unless operative treatment is submitted to, and thus the vision of these children is sacrificed.

These facts seem a sufficient excuse for my venturing to introduce here the subject of the importance of early treatment of squint.

It is necessary for us to teach that in addition to making the eyes straight our treatment is also to restore normal function. In fact the development and restoration of function are more important than the mere attainment of parallelism of the eyes because the continuance of the satisfactory cosmetic effect obtained may depend absolutely on the presence of good binocular vision, for when a cross-eye has been restored to parallelism by an operation, there is no assurance that it will remain so in the absence of the normal function of the eyes. The attempts to straighten the eyes may have been unsuccessful owing to the neglect of early treatment to develop the deficient faculties concerned in binocular sight, or disastrous as in the case of a former convergent stabismus having been converted into a divergent one.

In order to restore the normal functions to squinting eyes it is necessary, with but few exceptions, to give our attention early in the history of the case. Treatment should begin as soon as true squint has been diagnosed, no matter how young the patient may be nor the kind of strabismus present.

Practically all cases of cross eyes can be cured in the sense of restoring them to parallelism when the treatment is correct and the patient faithful, but if by a cure we mean to attain normal function in addition to parallelism, then the cure depends on the time of beginning the treatment as well as on the skill of the oculist and the fortitude of the patient.

Deficient vision of a cross eye may be a congenital or an acquired defect, but the fusion faculty appears after birth, being fully developed before the child has reached the age of six years, if attained at all. In order that the fusion faculty may be acquired in a normal manner, it is necessary that the child should have working vision in each eye, and that the eyes be straight. Without the power to fuse the images of an object as seen by each eye, the ocular functions remain forever defective. Now we know it is possible to develop artificially the fusion faculty in a child with defective sight and cross eyes, too, if proper treatment be commenced early enough. We also know that the vision of the squinting eye, being unused, may in time become practically nil; this amblyopia ex anopsia occurs in cases where the squint appeared before the children were six years old, rarely in cases beginning at a later period. Hence the importance of giving a correct answer when parents of a squinting child inquire the time for the beginning of treatment.

By the early treatment of cross eyes we expect to accomplish three objects: 1. The acquirement of good vision in the squinting eye. 2. The development of the fusion faculty. 3. The attainment of parallelism of the two eyes. By deferred treatment we can only hope to accomplish the last object alone. This in the past has been considered the whole cure of squint, as the deviation only is patent to all.

Claud Worth, whose work I had the privilege of studying in London three years ago, deserves the credit of directing our attention to the necessity of and methods for giving rational and successful treatment in early squint cases.

Let us follow out only in a general way, the usual procedure of an oculist when a case of strabismus is presented for early treatment.

The subjective examination gives him the approximate date of the appearance of the trouble, and

the supposed cause, a fright, a fall, previous sickness, heredity, etc.

Inspection will determine whether the deviation is convergent or divergent, unilateral or alternating, and the extent of motion noted when the rotations of the eyes are tested both separately and together.

Next, each eye is examined for its power of fixation that false fixation may be detected if present. For this purpose the child should be placed in the dark room and the ophthalmoscopic mirror used, the degree of deviation being estimated at the same time. The ophthalmoscope will reveal any defect of the media or eye grounds.

The exact amount of the deviation of the eye may be accurately measured, in the absence of a deviometer, by using Priestley Smith's tape. I have found the Wells attachment to the perimeter for this purpose excellent for the older patients.

The vision of very young children can be tested by using balls from half an inch to an inch and a half in diameter, testing each eye separately, by rolling the balls across the floor, noting the patient's ability to follow and find them. All children enjoy this test as if it were a game.

The accurate determination of the refraction of each eye is now necessary. This should be done in the usual way after using atropin in the eyes for at least a week. Fortunately, by means of skiascopy, or the "shadow test," the error of refraction in babies even but a few months old may be measured most accurately. At this point, although the examination is not complete, glasses should be prescribed if any important error of refraction has been found. I have prescribed glasses for children but a year old, and I saw one of Worth's patients less than four months of age wearing glasses most satisfactorily.

Finally, we test for the presence of the fusion faculty with Worth's amblyscope. This instrument is adjusted to the angle of deviation, and with the different sets of pictures any degree of binocular vision may be discovered.

The natural desire for binocular vision when the fusion faculty is present causes the eyes to take a parallel position when looking at a distant object, but should this "desire" be interfered with, then the center of equilibrium for the eyes is easily upset and convergence, for instance, may result. Then to see an object distinctly, one eye or the other must look directly at it, and, as the eyes must move together, the one with the weaker vision naturally assumes in this case all of the convergence in fixation, and it is the one said to be crossed while in fact both eyes are concerned, though the squint can show in but one eye at a time. The vision of the squinting eye is mentally suppressed, for, contrary to the popular belief, a cross-eyed person does not see in two directions at once. The conjugate movements of squinting eyes are perfect and rotate through exactly the same angles.

Worth claims that the essential cause of squint is a defect of the fusion faculty, and his arguments are most convincing; he shows clearly the weakness of Donder's theory.

Having now all of the necessary data, let us turn our attention to the question of what the early treatment of cross eyes consists. First, the error of refraction must be corrected and the glasses must be changed from time to time to conform with any change in the refraction, the glasses being worn constantly.

To me it seems well to explain to the parents that the lenses are to correct the defective focus of the eyes and have no direct effect on the cross itself. Parents believe that the effect of the glasses is like that from medicine, the stronger the dose the greater the action, and sometimes will suggest stronger glasses for any remaining deviation or express a fear that the glasses may be too strong; having noticed that the eyes will be straight as long as the glasses are worn but cross when they are removed, they fear the eyes are being weakened or injured by wearing lenses so potent.

Let us explain that the glasses are to improve the vision by correcting the congenital defect of refraction, and thus they aid in the cure of squint.

In alternating strabismus we usually find good vision in both eyes. This may also be the case in unilateral squint if seen early after its appearance, but in neglected or improperly treated cases the sight of the deviating eye is often very defective. Measures to develop the vision in such an eye must be promptly instituted after correcting the error of refraction. This we do by excluding the good eye according to the plan suitable to the case, making the child use the one with the weaker vision. When glasses are worn we may utilize the lens over the good eye by placing a pad behind it to close the eye, or possibly by pasting plaster over it to exclude its vision. By using atropin in the good eye exclusively more work is thrown on the weak one; and we often find the patient using the poorer eye for near and the atropised eye for distant vision; thus both eyes are kept in use and in some cases we find this quite sufficient to attain our object. It is most interesting as well as gratifying to see how promptly in many cases that the squint disappears when good vision is acquired.

When working vision has been attained in the squinting eye, say ability to find the inch ball at twenty feet or better, we should proceed to the treatment for developing the fusion faculty. For this purpose we use the amblyscope properly adjusted for the deviation; it is provided with an adjustable illumination for the picture before each eye, so that the image for the poorer eye may be made to equal or exceed the distinctness of the image of the better one. We can use this instrument successfully with children as young as three or three and a half years. While this treatment may prove to be tedious, it is of the utmost importance and the results are often very satisfactory, especially to the parents, for early and correct treatment of squint will prevent a large number of such patients ever coming to operation. And even should surgical measures finally be necessary, the early treatment will have insured the stability of the parallelism and a normal pair of eyes for future work.

Sometimes I have been seriously embarrassed to find that my kind but misguided medical or lay friend before referring a squint case to me had made great effort working the parents up to the expectation of submitting to an instant operation of "cutting a cord in the eye to allow it to come straight," or he had promised that I could cure the squint by simply putting on a pair of glasses. Unfortunately for all concerned, the correct treatment of strabismus, as we have so incompletely described in this article, is not so simple nor are we so sure in getting quick action.

When all has been accomplished that is possible by improving the sight and developing binocular vision, and any deviation remains, we then proceed to the surgical treatment. As now the operative procedures differ in no wise from those undertaken at any stage of strabismus, we need not take up further time to discuss this phase of the treatment; but a plea is hereby recorded to do advancement operations or an advancement combined with tenotomy in preference to tenotomies alone of any character.

From the neglect of the early treatment and because tenotomies have been done when advancement operations should have been performed, both oculists and patients have received their bitterest disappointments from the results following the treatment of cross eyes.

IMPRESSIONS OF THE KILLIAN AND THE GUISEZ CLINICS.*

By CHARLES G. LEVISON, M. D., San Francisco.

My visit to the Killian clinic was made for the purpose of familiarizing myself with the technic of bronchoscopy, and no time was lost in getting to work.

Killian is exceedingly active and is interested in every one exhibiting a desire to work; for them he always has a spare moment. His clinic being the University nose and throat clinic, one sees no mastoids, which is a source of great regret to the professor, as he is very much interested in this chapter on the surgery of the head.

I was interested in his septum operation, which he does with great skill. The anesthesia is produced with a one per cent cocain adrenalin solution, which he injects with his own model syringe at the three points of emergence of the nerves. He incises the most prominent side of the septum, operating ambidextrously, going through the septum coincidentally with the cutting of the mucosa.

I saw no sinus operations during the week that I spent at the clinic, and from what I could glean there are not many, as Killian's material is limited.

The course on bronchoscopy is given by Dr. Bruennings, Killian's first assistant, and he is entitled to more than a passing mention, for it is to him all the credit is due for the recent modifications of the Killian equipment; but four different sized tubes being necessary to carry out all of the manipulations of bronchoscopy and esophagoscopy in both adult and child, thus doing away with so many different sized instruments which were necessary before. Bruennings is a genius in his way, and is prone to modify every instrument that he employs. There is but one instrument, as far as I was able to observe, that he has not succeeded in improving, and that is the Ballenger knife.

Killian has collected the tubes employed by Kussmaul in his original esophageal work while in Freiburg, I. B., and which are highly prized as historic exhibits. These tubes are straight, made of tin, and were introduced with an obturator.

In the course given by Bruennings the evolution of bronchoscopy and esophagoscopy is dwelt upon at great length, all credit being given Michulicz, who is recognized as having placed esophagoscopy upon a working basis. Von Hacker is also given credit for his pioneer efforts.

As the illumination is the one factor of fundamental importance, this subject is discussed in detail. The Caspar system is in general use, but is not employed by Killian; the Kirstein lamp, however, is employed, and it has given general satisfaction, more especially since it has been modified by Bruennings, who has again improved the same, and I am in daily expectation of receiving this model. It might be well to mention here the lamp which Guisez of Paris has devised with Colin's assistance; it consists of a headpiece upon which three small incandescent lights are fastened; this headpiece is perforated at its center, and through this opening the field is inspected. This illumination is fairly satisfactory, but it has many drawbacks not shared by the Bruenning model.

The technic of bronchoscopy is possible without a general anesthetic, only when a careful cocainization is produced. Probes are wound with considerable cotton and are saturated with a twenty per cent. solution of cocain, then a few drops of adrenalin are also dropped upon the probe. The tongue is covered with a piece of gauze, and is held between the fingers as is done in a laryngoscopic examination. The laryngeal surface of the epiglottis is then covered with the probang, which is allowed to remain undisturbed for a short time; this is to be repeated. When bronchoscopy is carefully performed it is not necessary to cocainize outside the larynx as must be done in esophagoscopy. When the epiglottis no longer reacts, another probe cotton wound saturated with the same solutions, as before mentioned, is next introduced into the larynx, and when this is carefully anesthetized the short tube is introduced between the vocal cords and a cotton wound probe is introduced into the trachea, pushing forward as the local anesthesia becomes pronounced. The probe is then pushed down into the bifurcation of the trachea. All of these manipulations can be performed under direct inspection. As considerable time is necessary to produce satisfactory anesthesia, much patience must be exercised, for otherwise the operation becomes quite impossible. When cocain is not feasible, as in young children, general narcosis is necessary.

* Read before the Society of Eye, Ear, Nose and Throat Surgeons of San Francisco.

Further details of the operation will not be considered here.

One point of importance should be mentioned in reference to the advisibility of performing a high or low bronchoscopy. Killian and his followers advise a low bronchoscopy, involving a tracheotomy as being advisable in all conditions where a high operation cannot be easily performed, and they claim that the tracheotomy does not influence the prognosis. On the other hand, Schroetter of Vienna maintains that not to succeed in the high operation is an evidence of imperfect technic.

One case of foreign body in the lung that was under Killian's care during my visit was associated with more than passing interest. This case was in an individual who had suffered a round nail to enter his trachea. The patient had been referred by Shultess of Zuerich, and despite innumerable attempts on the part of Killian to extract the nail, his efforts were futile. Killian had many models of extracting instruments made for this case, but none of these were effective in separating the nail from the tissue, in which it lay so firmly imbedded. On the day that I left the clinic, Killian was to make his last attempt, and if this were to prove unsuccessful he contemplated pneumotomy. I have not heard of the subsequent history of the case.

While in Paris I saw considerable of Guisez. As he is the only individual in that city who has had much experience in this class of work, most of it is directed to him. He employs a ten per cent solution of cocain for anesthesia, at times a general narcosis.

All of the operations that I saw him perform were esophageal in character. One morning at the Hotel Dieu, I saw two carcinomata of the esophagus through the tube, and I also saw Guisez perform one operation through the esophagoscope for stricture of the esophagus. The cutting was done under direct observation and was followed by dilation, all at the same sitting. I also saw a child, upon whom a similar operation had been performed some time before. The child had swallowed lye, causing a stricture, for which a gastrostomy had been performed. Subsequent to the direct esophagotomy the gastrostomy wound closed. Both of the results in these cases were quite satisfactory. I also saw Guisez perform a similar operation at Tuffier's clinic.

The operation of esophagotomy in itself is not difficult, but it requires great patience on account of the hemorrhage and the accumulation of mucus, which obscure the field of operation.

In both the Killian and the Guisez clinics, strong solutions of cocain are used with no precautions, and I learned that they have had but little annoyance as far as toxic symptoms were concerned.

BRONCHOSCOPY.*

By E. C. SEWALL, M. D., San Francisco.

As the instruments used in bronchoscopy and esophagoscopy and the technic of their use have been ably described this evening, I wish to speak upon the value of the method as a means of diagnosis, and also to call attention to the diagnostic features, which should lead us to consider the use of them necessary.

There are some very important points to be taken into consideration in passing a tube into the esophagus. The narrowest part of this passage is about the level of the cricoid; below this it widens out considerably, being constricted again at the cardiac opening of the stomach. The difficulty is all encountered in passing the level of this narrowest part. Once the tube has entered the wider part of the esophagus, its passage is easy and diseased conditions can be studied at leisure.

There are, however, conditions of greatest importance lying at the upper end of the esophagus, at the point where we are not passing the tube under the directions of the eye, and where we are overcoming the angle between oral and esophageal cavities. At this time, we are apt to be using considerable force and it's just here that the greatest danger lies. Mueuliez, who, following Kussman, was the pioneer in the use of the esophagoscope, reports two deaths from damage done at this point. To quote Starck of Karlsruhe, the conditions to be met here are: carcinoma, diverticulum, traumatic-cicatrices, foreign bodies, compression-stenoses, spasm, and specific inflammation, as lues and tuberculosis. His method of diagnosing these high-lying conditions is to pass the tube, with its close-fitting mandarin over the base of the tongue with the greatest care, and as soon as a resistance is felt to withdraw the mandarin and study the obstruction under the eye.

Von Eicken of Killian's Clinic has characterized the examination of this particular field hypopharyngoscopy. He recommends two methods of giving one a better view, one is to grasp the larynx with the hand, and pull forward from the vertebral column. This is possible only in elderly people with thin necks. The other aid is the use of a hook or sound which Von Eichen has called the "larynx elevator." With this in a cocainized larynx, the larynx is pulled forward. He then examines with a tube spatula under the direction of the eye without the aid of a mandarin.

The diverticulum is not an uncommon condition met with in this particular part of the esophagus. The chief aim in the study of such a condition through the esophagoscope is to find its lower opening, in the hope that it might be dilated by sounds beneficially.

I have had experience in one such case. Patient was a man about 60 years of age, referred by Dr. Cheney, who had made the diagnosis from the history of a diverticulum. A mandarin was first passed until the obstruction was reached at the level of the cricoid cartilage. Next a tube was passed and the diverticulum entered without difficulty. The walls, as far as they could be studied, were normal in color, but the inferior wall was very thin and would have been very easily ruptured on the pas-

*Read before the Society of Eye, Ear, Nose and Throat Surgeons of San Francisco.

sage of a sound with any force. Large quantities of mucus were drawn off, but after careful search, the opening into the esophagus could not be found. Generally, this opening lies in the left or anterior wall of the diverticulum; but often cannot be found because of its location and extreme narrowness.

A case of stricture of the esophagus in which we were apparently able to increase the calibre of the tube is of interest. Patient, woman, age 60 years, presented herself at Cooper College Clinic with a history of long standing obstruction of the esophagus. She had such difficulty in swallowing that she was only able to take fluids. The condition had existed, although less pronounced, throughout her life. Of late years, it had grown more difficult for her to take food. She gave absolutely no history of a trauma of any sort, or other circumstance to which the trouble could be attributed. She was treated in the medical clinic of Cooper College some 20 years ago, but they were unable to pass the sound, the patient said.

Examination showed nothing pathological until an attempt was made to pass the mandarin. A distinct obstruction was felt about 25 c. m. from the teeth. A tube was then passed and the obstruction distinctly seen. The narrowing was concentric with a small aperture ½ c. m. in circumference at the bottom. Into this we were able to pass a mandarin and under guidance of the eye it was forced through the stricture. This procedure has been repeated twice a week for some weeks, and the patient said she could swallow somewhat better. She has returned to her home at present, but we hope to be able to go on to some definite result in the future.

The diagnosis of the presence of a foreign body in the lungs is not always easy, as a case that was presented while I was in Prof. Killian's clinic shows. This patient had been under able doctors who had failed to make a diagnosis, and even sent him to a resort for tuberculosis. He refused to show signs of the disease, however, and Prof. Killian cured him by taking a large piece of bone out of a bronchus, after X-ray had failed to demonstrate it.

The history of the case is the first consideration and often carries with it the diagnosis. But things are occasionally aspirated without the patient really being aware of it. Coughing is one of the first symptoms expected, but this may entirely cease, or may be intermittent in character. Expectoration is present at times, and where the body has lain until an abscess has formed, there may be profuse discharge of pus, sometimes bloody. A feeling of pain is often called attention to by the patient, also an oppressive sensation of suffocation. The dyspnea varies from being not noticeable to the extreme condition, accompanied by cyanosis, retraction of the intercostal spaces, and rapid shallow gasps.

The Roentgen ray may help or not according to the substance aspirated, bone will often not be definitely shown when even of good size.

A comparison of the two sides of the chest is of the utmost importance. Dyspnea with no difference in the findings in the two sides points to the location of the foreign body in the trachea. A lack of movement of one side accompanied by feeble breath sounds, a flattened percussion note, point to the location of the foreign body in the corresponding bronchus. All signs are sometimes obscured by emphysema which can readily occur in these cases, a fully obdurating foreign body giving no signs where accompanied by emphysema, according to Von Eicken.

DISCUSSION.

Dr. Welty: We should all be very thankful especially to Dr. Selfridge for presenting this subject in this clear and concise manner. This is almost a new field, and great good has been accomplished all over the world.

I wish to report two cases, one in a child six years old, who carried the pin in the larynx for two weeks. This open safety pin which I show you was lodged in the larynx just below the vocal cords. During the first week the child suffered greatly with paroxysms of dyspnea. No pain. During the second week would have paroxysms of coughing without pain. The slightest manipulation of the neck would produce a cough. The pin was located with the X-ray, child put under general anesthesia, after which the parts were cocainized and the foreign body removed by the same manipulation that you have seen this evening. An uneventful recovery.

Case No. 2. Some three months ago, a man aged 46, while eating a chop felt something lodged in his throat. Consulted several specialists who could not locate foreign body. On very careful examination under cocain anesthesia, I could not locate the spot that suggested the slightest suspicion of irritation, and I could see as far as the bifurcation of the trachea. The following day I introduced the tube into the esophagus, encountering considerable difficulty. After it was in place my light failed, and I had to remove the tube, intending to introduce a larger tube. However, he would not submit to further manipulation on that day. Thirty minutes later he had a severe coughing spell and coughed up the foreign body. Evidently I had loosened the foreign body by the introduction of my tube.

GENERAL PARESIS.*

By G. D. MARVIN, M. D., Agnew.

I have selected general paresis as my theme because of the importance of the disease in this period of rapid development, and as it is one of the diseases of civilization it teaches us that the price some pay for it is rather high. McPherson's definition of general paresis is "a subacute inflammatory disease of the brain, occasionally extending to the spinal cord and the larger nerve trunks. It is characterized by the concomitant appearance of mental and physical symptoms. On the mental side there is progressive dementia, to which is superadded insanity of the maniacal, melancholic or confusional type. On the physical side there is paresis and inco-ordination of certain parts of the motor mechanism with partial degeneration of the osseous cartilaginous and muscular tissues." The disease occurs in the active period of life, the larger number of cases appearing between the ages of thirty-five and forty-five. It occurs more

* Read before the Santa Clara Medical College Society, February 19, 1908.

frequently in the male sex, the ratio, as given by a number of writers, being six to one. In the Agnew State Hospital during the last seven and a half years there have been sixty-seven men and six women die of this disease, making a ratio of over eleven to one. The whole number of deaths during this same period was six hundred and fifty-five, which shows a fraction over eleven per cent of all our deaths due to this disease alone. The class of persons affected by this disease are the more intelligent, better educated and hard brain workers, who live rapidly and dissipate along the usual lines of high life; however, they are seldom failures until the disease undermines their reason and their judgment is destroyed. They are a companionable class, and although frequently selfish, are sought after in society, and when admitted into a hospital for insane are in the earlier stages of the disease a very interesting class. Later they become very demented, are filthy in their habits, and are exceedingly troublesome to the attendants who care for them. When first committed to a hospital, those of the maniacal form are excited and violent, will resort to any means to gain their liberty; this failing, will become filthy, smearing their person and room with fecal matter, but after a short time will become more quiet and cleanly, resume many of the habits of polite society and endeavor to make themselves comfortable in their present surroundings, and as before stated, become companionable patients and so remain until the dementia advances so far that the mind becomes nearly a blank.

The exciting cause of general paresis is allowed by all to be in a majority of cases syphillis; a few go so far as to claim that all cases are due to this poison. Among the contributing causes alcohol leads, to be followed by sexual excesses (debarring masturbation), metallic and vegetable poisons and mental strain.

The early recognition of this disease is very important, for, as mentioned before, it usually attacks the people who are successful, and a well-to-do business man becomes exceedingly venturesome, and before the real condition is realized he has involved his property so deeply that his family is left destitute. Symptoms in the early stages resemble neurasthenia, and as time passes lapses of memory shown by the dropping of a letter from a word or a word from a sentence while writing or in speaking, a slight hesitancy or a mispronounced word is noticed. Sleep is irregular. The proprieties of life are not so closely observed; they become careless in dress, show extravagance in the use of money, use alcoholic beverages more freely, indulge in sexual excesses and show a condition a little below par mentally, morally and physically. In the beginning the patient realizes that something is amiss, but as the disease advances they lose the sense of being ill and take no further notice of their irregular actions. When the time arrives that it is advisable to commit these persons to a hospital, the delusions of grandeur are especially manifested by the belief that they possess untold wealth.

To illustrate this: When F—— was received at the hospital he claimed to be worth a thousand billions. He was going to start on a trip around the world the next day in his airship and engaged me to accompany the party as surgeon at a salary of ten millions a day. At the same time he gave the correct amount of a debt of less than one hundred dollars which he wished to pay.

One of our cases of general paresis eluded his attendant one day and climbed to the top of a four-story building. When he was at last rescued he was making his way to the edge of the roof with the intention of flying to his hotel and if he had not been intercepted would have deliberately jumped off and probably been killed. He was safely lowered by means of a rope. He died eight months later.

To commence again the delusions of grandeur, stammering speech, trembling tongue, changes in the pupil and patellar reflex and general inco-ordination of movement give so vivid a picture that diagnosis is quickly made. Convulsions are another prominent symptom of general paresis, and closely resemble epileptic or apoplectic seizures, and are frequently followed by partial paralysis, which usually improves rapidly but leaves the patient on a lower plain than before.

In conclusion, a few words in regard to prognosis and treatment. Prognosis is always bad; the average length of life is three years. Some cases go very quickly to a termination, while others improve for a time to such an extent that they are able to resume their work for an indefinite time, and some intercurrent disease may cause death; if this does not occur the active symptoms become more pronounced again and the decline continues until they die of exhaustion. I have tried a number of different lines of treatment, but the only drug that has appeared to have any beneficial effects has been small doses of iodid given three times a day for months at a time. All the cases that have improved enough to leave the hospital for a time during my service have received this treatment, and, contrary to the usual teachings, it has not interfered with digestion, and the patients have usually gained in strength and weight.

My usual prescription is:

R Iodide of Potash	-	z v
Bichloride of Mercury		gr. t
Water	- -	z v iii

of which zi is given in water three times a day after meals.

The absence of stomach irritation may be due to the small doses of mercury, which in itself is a tonic.

SOME NOTES ON POSOLOGY.*

By GEO. F. HANSON, M. D., San Francisco.

A well-known medical author prefaces his remarks upon posology by the statement that the dosage of medicines is the weakest part of the therapeutic armamentarium, and says that "if the accumulated rubbish of ages, which has been called therapeutic knowledge, is ever to be given scientific

*Read before the Cooper College Science Club.

shape, the question of dosage must form one of the principal cornerstones in the foundation." May it not be that this matter of dosage is largely responsible for much of the so-called therapeutic nihilism existing at present even among our prominent men?

As a matter of course it is essential that our text books should furnish a list of doses as a guide in the writing of prescriptions, but it is only in the latest (8th) edition of the U. S. Pharmacopeia that the Committee of Revision has ventured to suggest average doses for adults. During the previous three quarters of a century, comprising the life of the seven previous revisions, no doses were even suggested, and it was not intended that the present average doses should be by any means considered arbitrary.

The pharmacopeias of some other leading nations, such as of Great Britain and Germany, also disclaim any intention of attempting to fix unchangeable standards of dosage. Committees of revision generally recognize the well nigh insurmountable difficulty of reconciling the widely varying elements of sex, strength, habits, individuality, idiosyncrasy, etc. The numerous factors qualifying the amount to be administered at one time have, in the case of a large number of agents, been carefully worked into equations, such as the relative absorbability per orem, per rectum and hypodermically, or during varying states of the circulation, etc. How often if we adhere to the average dosage outlined, do we either fail of getting any results or only feeble or disappointing ones. Too often these results are modified materially by the administration of other remedies given simultaneously, or in too frequent alternation. Poly-pharmacy and poly-prescribing for symptoms are twin evils that beset the pathway of the beginner. His anxiety to alleviate each new ache as it arises leads him to multiply bottles upon the bedside stand of his patient until it soon puzzles the attendant to keep their rotation accurately timed. Again, results may be nil because of inert preparations, or because the fear of overdosing by a shotgun prescription may impel to the giving of such small amounts of each remedy that the combined effect is only a disordered stomach.

The usual state of health of individual patients must necessarily have considerable weight, as a high average of vitality would be likely to render cell resistance to drugs greater, just as to other poisons. Some chronically ailing, feeble little middle-aged women are affected proportionately as compared with a big, robust young athlete, about in the ratio of their physical strength and weight to his. The difference is practically as great as between a child of two or three years and an adult. If an epidemic of disease were crossing the pathway of both we would expect the little woman to be attacked although the young man might escape. And this means that while the average pharmacopeial dose of a remedial agent might be followed by its full physiological effect upon the little woman, no effects would follow a like dose administered to the man. In the latter case we are prone to resort to a change of remedies, perhaps with no better result, and after shifting about from one remedy to another for a time we may eventually come to the conclusion that drug giving is a failure. The method to be pursued is obvious. If the physiological action of a certain drug is required or worth having, it is worth having at once. We are justified in increasing the dose or shortening the intervals between doses until we get its action. It can then usually be maintained without difficulty by smaller doses, less frequently administered. In the case of the two classes of drugs requiring the greatest caution, the narcotics and depressants, of the latter the oft quoted coal-tar derivatives and allies being most frequently followed by untoward or alarming effects, the damage is rarely from a large initial dose, but from frequency of repetition beyond the safety line.

When, during the administration of the average line of medicine, such as the salicylates or the iodides for instance, we appear, day after day, to be getting little or no benefit from our treatment, is it not commonly the fault of our doses?

Often we may determine the question as to whether our remedies are being fairly well absorbed or assimilated by some simple test, as for example, when we are endeavoring to maintain alkalinity of the urine, or vice versa, or when we are administering salol or other phenol or salicylic acid compounds.

Negative results from a drug do not necessarily mean its abandonment. If we are sure of our diagnosis and are reasonably certain that no impediment exists to the absorption of the medicinal agent, that agent should be promptly pushed until we do get results. The only exception to such a course is in cases where cumulative overdoses might do serious injury to some of the tissues of the body.

The old familiar example of digitalis might here be cited. The average dose of the tincture mentioned, 15 m., is supposed to represent the whole activity of 1½ grains of the leaf. Three drachms of the infusion contains twice as much of the leaf and is usually repeated with the same frequency. Is it any wonder that many physicians have become so skeptical regarding the tincture? And that it has become the habit of many practitioners to specify individual "makes" of the tincture because the drug is known to be assayed and because experience has justified the choice?

Digitalin, in the form of the 1-100th gr. hypo tablets so abundant in the market, was another of the disappointing preparations. More recently considerable use has been made by preference of the German digitalin (dose 1/10-½ gr. t.i.d.) this being a mixture of Kilianis digitalin with digitoxin, digitalein, and some inert matter. Reports of its efficacy are, I believe, generally favorable.

Another example is the spiritus glycyrilis nitratis, with its specified average dose of 1 m. How often do we get any noticeably beneficial result from that dosage? So small an amount of a 1% alcoholic solution of nitro-glycerin may be tried as a "feeler,"

but if we get the anticipated results from it those very effects are fairly positive evidence that we were not really dealing with a case of high arterial tension.

An instance by way of illustration of the faulty administration of a nitrite is shown when death impends during chloroform anesthesia. A nitrite is frequently employed even when the arterial tension may be nil. Should the patient not take his departure for the happy hunting grounds under such circumstances it is certainly not our fault.

The pharmacopeial dose of fldext, cannabis indica is given as 1 m. I believe that only in rare instances does any appreciable effect follow that dosage, and have known a young man to take 60 m. without other results than a prolonged sleep; little or no dreaming and no hallucinations. Twenty-four hours' continuous sleep.

Still another example of conservative dosage is that of the various fluid extracts of rhamnus purshiana, 15 m. How often is three or four times that amount lost in the devious pathway of the alimentary canal?

From the instances cited one might gain the impression that much larger doses are sought to be recommended as a general procedure; this is certainly not the writer's intention. In the majority of instances the dosage would appear to be satisfactory, particularly in those cases where a long continued impression upon the system is to be made rather than a prompt and a fleeting one. It is rather the aim of the paper to impress the necessity for sufficiently large doses to secure the physiological action of the remedy administered. Repeating the average stated dose day after day in the hope that we will soon get results, is at least disappointing, and as already suggested tenders to foster therapeutic nihilism. In those rather numerous cases where large doses of a given drug are commonly followed by physiological effects notably different from small ones, the action desired has, of course, always to be borne in mind. Of this feature the pharmacopeial average dosage takes no cognizance, the dose being fixed with few exceptions in reference to the most generally sought or most pronounced effect of a given remedy. (Exception, e. g. Ipicacuanha.)

After all, so many factors have to be taken into consideration when attempting to fix doses, that although we may administer only assayed drugs, in order to get uniform results we would have to have our patients assayed as well.

Fortunately much has been accomplished and is still being accomplished by earnest investigators into the pharmacological action of remedial agents. Laboratory research and control experimentation are gradually clearing up much that has been simply empirical. Through the knowledge thus gained may we not hope to be enabled to more accurately gauge amount and frequency of dosage for the attainment of certain results under known, even though variable conditions?

Apropos of the tolerance to increased dosage of drugs acquired by individuals and by considerable proportions of tribes or peoples, as so familiarly instanced in the hasheesh eaters of India, the arsenic takers of Styria, the opium smokers of China and the highball colonels of Kentucky, a rather unique instance is mentioned in a September, 1906, number of the London Lancet, of a man aged forty-three who took 576 grains of morphin in two doses an hour apart. He was a habitual user of the drug and had reached a daily consumption of about one drachm. On this occasion he swallowed pills to the amount of 288 grains, possibly with suicidal intent, and shortly after repeated his pharmacological experiment. It is perhaps superfluous to add that his age limit was forty-three.

INDICATIONS FOR OPERATIONS ON THE STOMACH.*

By WALLACE I. TERRY, M. D., San Francisco.

Within the past few years many articles have appeared in the literature on the surgery of the stomach, but the subject is such an important one that I felt it might not be amiss to consider a few phases of it and more particularly the indications for operative measures.

The disease which is responsible for most of the serious stomach disorders is gastric ulcer. Its incidence has in the past been underestimated and its numerous sequelae were not fully appreciated until stomach surgery was put on a firm basis, and living instead of dead pathology studied. Gastric ulcer occurs in various forms, from the mere insidious erosion of the superficial cells of the mucous membrane to the acute perforating ulcer of the entire stomach wall, and its sequelae vary from an insignificant little scar to extensive contractures, even almost complete obliteration of the stomach lumen.

Taken in time and under proper dietary and medicinal treatment the majority of ulcers will heal without leading to unfortunate after results, but in a considerable number of cases the depth of the ulcer and its anatomical position are such that permanent and serious damage to the stomach is the inevitable result.

That the diagnosis is often overlooked can scarcely be gainsaid, the term "gastric dyspepsia" is applied so frequently and covers a multitude of pathological conditions, but it seems to me that our knowledge of gastric diseases is now in a similar transitional stage to that of lesions of the appendix in the early nineties. Then a diagnosis of appendicitis was obscured under the term "inflammation of the bowels," but today the symptomatology and pathology of appendicitis are so well understood that the proper diagnosis is usually made and I am fully convinced that in the near future the diagnosis of gastric diseases will be as well understood.

About the most important indication for surgical intervention in acute ulcer of the stomach is hemorrhage. The quantity of blood lost and the persistency are the factors which should determine the

* Read before the Santa Clara County Medical Society, March 18, 1908.

propriety of an operation. If a patient has one severe hemorrhage the delay before proceeding to operation should be scarcely longer than is necessary to obtain the consent of the patient and the proper hospital facilities. I realize that many physicians take the standpoint that one should wait until the patient has regained the amount of blood lost, but such delays are dangerous, the hemorrhages often continue and the patient is finally put on the operating table in extremis. The persistent slight hemorrhages which are apparent only by testing the feces or vomitus for occult blood, and which do not entirely cease after a couple of weeks' rational treatment should also be an indication for operative measures.

There is still some difference of opinion among surgeons as to the wisest course to pursue in dealing with bleeding ulcers. Excision of the ulcer when it can be quickly found and is in such a situation that its removal is not attended by many mechanical difficulties is the operation of choice in the opinion of many. On the other hand the facts that ulcers are often multiple and that a simple gastroenterostomy or a pyloroplasty cures these cases are held to be good reasons for the performance of these operations. A gastroenterostomy cures these cases by allowing the stomach to drain and collapse, for with ulcer there is usually an attendant spasm of the pylorus causing distention of the stomach with a widening of the ulcer. In certain cases it is wise to both excise the ulcer and do a gastroenterostomy, especially when a duodenal ulcer or pyloric obstruction coexist as is fairly often the case.

Perforation of a gastric ulcer demands immediate operative treatment. Since the first operation for this condition by Mikulicz in 1883 the mortality has steadily decreased. Reliable statistics are only obtainable from the large clinics, as many occasional operators do not report their cases, but the estimate of T. Crisp English from fifty consecutive cases shows that fifty-two per cent recovered after operation. With the small round ulcer it generally suffices to close the ulcer by suture and make a careful toilet of the peritoneum. The large perforated ulcers must sometimes simply be packed with gauze and further operation done when the patient has recovered from his peritonitis and will stand more radical measures. Generally speaking a similar policy should be pursued as in the treatment of typhoid perforations—operate quickly—do no more than necessary and get out of the abdominal cavity.

Pain is another indication for operation, when after a reasonable length of time and under approved treatment it does not cease. Such pain is typically of a dull, boring character and extends through to the back, especially just to the left of the spine. Such pain is often accompanied by nausea or vomiting, by hyperacidity and by tenderness localized generally to a small area just below the ensiform cartilage. The pain may vary considerably both as to character and location so for one to make a diagnosis of gastric ulcer from the symptom of pain alone is scarcely justifiable or rational; other signs and symptoms must be given due consideration. What I wish to convey is that persistent pain due to ulcer may be sufficient justification for an operation. Here again the object of the operation is to drain the stomach of its usual highly acid secretions and by allowing it to empty itself soon after the ingestion of food to give it sufficient rest so that the ulcer will heal. When we consider that the majority of gastric ulcers are located at or near the pylorus and that food is violently thrown about in the pyloric region during the churning process, it is easily understood why these ulcers are apt to be painful and slow to heal. If rectal alimentation could be kept up for a period of from four to six weeks it is probable that most simple ulcers would heal, but unfortunately the lower bowel usually becomes intolerant of food within a short time.

Pyloric obstruction is one of the most common indications for surgical intervention on the stomach. Its causes may be conveniently divided into intrinsic and extrinsic. In the former category are to be mentioned ulcer with accompanying spasm; cicatricial contraction usually due to ulcer; congenital stenosis, and tumors. Of the extrinsic causes we have adhesions the result of gallbladder disease, inflammation of the hepatic flexure of the colon or of a peritonitis which has involved the right upper abdomen; pressure from neoplasms outside the stomach; and ptosis of the stomach with a resultant kink of the pylorus. Mention should also be made of narrowing of the upper portion of the duodenum from various causes, which stenosis gives rise to a similar train of symptoms noted in pyloric obstruction. Dilatation of the stomach is a sequel of pyloric obstruction and with it go motor and secretory disturbances, vomiting, loss of weight and other minor symptoms. The retention of large quantities of food leads to gaseous distension and these patients soon learn the relief that vomiting gives them and often become familiar with the use of the stomach tube. It is surprising how long some extreme cases of pyloric obstruction will continue to exist, at a minimum body weight, not daring to eat many articles of food which by hard experience they have learned to refuse, dyspeptics in appearance and often pessimists in thought. In many of these cases operation or autopsy reveals a pyloric opening no larger than a quill. It is I think a mistake for the physician to encourage the use of the stomach tube or gastric lavage for prolonged periods. The obstruction is mechanical and is seldom cured by any but surgical measures. The operation should depend upon the conditions present; release of adhesions may suffice in some cases; pyloroplasty or gastroenterostomy in others; while resections of the pylorus or of large portions of the stomach may be demanded in a fair proportion. I shall not attempt to take up the merits and demerits of these different operations, for it is not within the province of this paper, but the surgeon who undertakes this work should be prepared to meet the indications for each particular case.

Cancer of the stomach, unless too far advanced, is one of the prime indications for operative inter-

vention. Even in cases that seem far advanced much good can often be accomplished. A gastroenterostomy or a jejunostomy where the cardiac orifice is involved will permit the patient to be fed and a gastroenterostomy in those cases where the pyloric end can not be removed will give the patient a longer lease of life or a more comfortable existence during his remaining days. Where the cancer is confined to the stomach nothing less than a radical extirpation should be done, unless the condition of the patient absolutely precludes such measures. The statistics of stomach resections are encouraging, both as to the duration of life and the comfort of the patient and we can look forward to still better results, owing to improvements in technic and more widespread operative skill. Naturally we hope that earlier diagnoses will be made, for therein lies the great hope of the future, aside from the question of some curative cancer serum or other remedy.

In this connection attention should be directed to the influence of gastric ulcer on gastric cancer. In the past it was thought that only a small percentage of gastric cancers were preceded by ulcer, but the conviction is steadily growing that malignant degeneration of ulcers occurs in a large proportion of cases. Some writers believe that they can trace such a connection in more than half of their cases. The Mayos claim to have demonstrated that fifty-four per cent of their recent cases of cancer were preceded by ulcer. The fact that the commonest site of ulcer is at the pylorus (in eighty per cent) and that carcinoma also has its favorite seat at the same point (also eighty per cent) lends considerable weight to the argument.

Sarcoma of the stomach is comparatively rare and the diagnosis can only be made with the microscope. The same lines of treatment should be pursued as in carcinoma, but unfortunately sarcoma is more malignant as a rule. In the only case of sarcoma of the stomach which I have seen, I performed a total gastrectomy and united the esophagus to the jejunum. The patient recovered from the operation nicely, but died about five months later from extensive recurrences in the liver and small intestines.

Benign tumors of the stomach are also uncommon and call for no special comment except that they should be removed.

Foreign bodies in the stomach such as hairball, nails, pins, knives, forks and other interesting objects swallowed deliberately by neurotic individuals, or accidentally, are usually removed without difficulty by a gastrotomy.

Wounds of the stomach, especially stab wounds and gunshot wounds occuring in civil life require immediate operation. The gunshot wounds of the stomach in military life, caused by small caliber, steel-jacketed bullets having a high velocity are usually so small that the openings are at once closed by mucous membrane and a large proportion require no operative intervention. The matters of hemorrhage and the size of the wound will be important factors in deciding on the necessity for operation. In such wounds there is little excuse for probing—the information so obtained is questionable and the danger of infecting the peritoneal cavity is considerable. Where both walls of the stomach have been wounded and especially where the pancreas is also implicated, posterior drainage should be provided if any operation be done. The retroperitoneal space is easily infected, far more so than the peritoneal cavity, and with pancreatic wounds the danger of fat necrosis must always be considered, but experience has taught us that posterior drainage will minimize these complications.

In conclusion I wish to urge the present day need of the diagnostic incision in diseases of the stomach. The future, as I have before intimated, may see such improvements in diagnostic methods that an exploratory laparotomy may seldom be necessary, but until that time comes we should not keep a large class of patients on this or that medication without relief of symptoms, when by a relatively harmless incision a positive diagnosis may be made and proper remedial measures inaugurated.

OUR LACK OF BUSINESS METHODS*

By K. C. PARK, M. D., San Jose.

It is a notorious fact that physicians are known as poor business men, and we have justly earned the title. If men in the mercantile business tended their affairs and made as little of business opportunities as the physicians do of the opportunities that surround them, it would not take long for their fellow merchants to make comments on their lack of sagacity in the business world.

For many long years physicians have had the delusion that the practice of medicine should not be brought to a state of commercialism, yet that is where we now have it, only the commercialism is of the rankest kind. Some of you may object to bringing our profession up, not down, to a purely business basis, because of the idea that medicine and business won't mix, but as most of us came to San Jose because we believed it offered a good place for business, we should take advantage of the opportunities that surround us.

Each and every one of us is in active practice for the remuneration it will bring, yet for the lack of organization and the application of business methods, we are failing to get the financial reward that is due us for work performed.

For centuries the physician has been known as "a good and kind ministering angel" and the title has so tickled our vanity that we have gotten to believe we really are that "angel." It is a pleasant idea to have of one's self, but as "ministering angels" we have been imposed upon to such an extent that it is time to call a halt.

We all know that there are several sources in this vicinity that have so cheapened the work of our profession that we are simply the laughing stock of people who conduct certain lines of business calling for the services of a physician. In other words, we have a corner on a line of work that railroads, municipalities, institutions and insur-

* Read before the Santa Clara County Medical Society, February 19, 1908.

ance companies must have to do business, and instead of making the most of it, we seem perfectly satisfied to accept whatever fee they choose to offer.

I have failed to put lodge work in the above category for they should have no need of the physician except as medical examiner. The uses, however, to which they put the physicians have so prostituted the prices for medical attention that I desire to place that subject by itself, and give you a few facts that should show you that, as a body of men in business, we are not getting a fair reward for the services we give.

In San Jose there are 3,000 able-bodied men who belong to lodges which offer their members the services of a physician, free drugs, $7.00 a week when sick, confine their wives for three-fifths of our minimum fee (with no extra charge for twins or triplets) and the other members of the family having the right to demand the physicians' services, though the other privileges are denied. Now, for the most part it costs that man the munificent sum of one dollar a month for the benefits, and as an extra inducement, if one is needed, there are promised during the year three or four "feeds," as they are generally called.

At the lowest estimate the lodge members and their respective families that can call on the physician, is not less than 10,000 people. How many neighbors' children are worked in as members of the family, it is impossible to say, but it is done, as every man knows doing lodge work. There is little reason for a man joining these orders except for the benefits, but I fail to see why we, a body of men in business, should furnish the largest part of the benefits, and especially to a class of people who are earning good wages. When a man's application is solicited, it is not drummed into him the high principles upon which the order is founded, or how much a better man it will make him, but he is told of the free doctor, $7.00 a week, free drugs and $15.00 babies.

I know of one man who has the choice of four physicians for his family, and he has never been near his lodges since initiation, and never intends to go for he now has the right to call the physicians which was the primary reason for his becoming affiliated with the organizations. A few days ago a physician told me he intended to give up one of his lodges as several of his good pay patients had become members because he was the physician. It is comical to note the dignity with which we refuse to accept $20.00 for a confinement from some well deserving family, yet when behind the cloak of "brother this or sister that" we go and attend them and give our best work for $15.00, and it's more than likely, we denounce a brother practitioner who occasionally accepts a $20.00 case from a family whose financial circumstances are not nearly as flourishing as our lodge brother, who pays full prices for his groceries and meats, but not for his doctor, and who demands his full wage for his daily toil. Gentlemen, we are being used good and proper by these organizations and we do not seem to realize it, or if we do, we are content.

Railroad work comes in the same category as the lodges, but is of special interest as it shows how a well-to-do corporation makes use of our profession, with practically no outlay for service rendered. Only recently has railroad work been worth more financially than a pass unless the man injured needed an amputation or a severe major operation of some other character. At present the head local surgeon, I understand, is on a salary, though the assisting surgeon gets only a magic piece of cardboard that allows free transportation on all trains, either passenger or freight. The donor of this honor receives a large salary for keeping up the efficiency of his corps, and keeping expenses down. He is doing so most beautifully. A corporation so exacting of every penny due it for service performed should not complain if others practiced the same business qualities that they have mastered in every detail. You cannot blame the company for not paying out money when there is no use of doing so, but I believe an organized refusal to accept their fire sale rates for our service could be given them, and we should still be able to maintain a dignified posture, and at the same time earn their respect for possessing business qualities, if not the few dollars they now give for the excellent service they receive.

In the city and county positions that are now held by members of our profession, there is more or less salary provided for. It is necessary that every community have such officers, and though they now receive fair salaries a 50 per cent increase in all departments would not make them overpaid in the least. The county health officer could stand at least 300% before it began to be a fair compensation. The twenty-first assistant to some positions in other departments, now have more salary than the county health officer, and they do not do near the amount of work, even if it is not of a professional nature. There never has been a lack of funds for those who hold positions because of ability in bestowing some favor, and insistance for a larger salary for doing professional work I believe would be granted by our county officials, who so far have not shown a tendency to ask physicians to work without remuneration. With the exception of county health officer, the county pays well for our services.

About the worst imposition we have to deal with is the city board of health. An empty honor and more or less abuse is the magnificent salary attached to the office. With the exception of the board of health every branch of the administration has a fund for those in their chosen line of work, and I fail to understand why we should give our wares any more than the lawyers, engineers, grocers, druggists, butchers, etc. If this city is too poor to have a fund for such work, let the city go without a board till they get a fund. We have something to sell, yet we are asked to give our services to keep this community free from pestilence. Does the community thank you for it? Not a bit of it. In fact they roundly abuse you if you do not put forth your every energy that will stamp out whatever disease may get a foothold, and it's just because this

vicinity is not paradise is the greatest reason you are here. It is high time that this municipality is made to realize that the physicians of this community are not in business for pleasure and I would like to see every professional man refuse to serve on the board until remuneration is received.

I am fully aware of the fact that it has never been the custom to pay the board, but that does not make it right. You compel your private patients to pay you for your services or you refuse to attend them, then why not make city government, which is far from bankruptcy, pay for your service, which tends to cut off your private business. I cannot conceive of any other class of business men using methods that tend to restrict their source of livelihood. No wonder we are classed as poor business men. The honor that such a position on the board might bring does not pay one's monthly bills, for the greater part of the populace do not even know who are on the board, and it is questionable whether one ever get cases for private work, because of the position he holds.

Examining for insurance companies is another source where, until recently, we failed to apply business methods and with the exception of one or two companies, all pay our prices. These corporations never had to pay so what was the use of it when plenty of men wanted the work and would almost underbid each other to get it? Some time ago we got together and after a fashion demanded more for our work and we got it, and this one instance proves what even a semblance of business methods will do, and if you will look at it right you must see that our services, even at our prices, are indispensable to the smooth running of all companies needing physicians.

There is another source that asks the physician for his services though, at present, I do not know of any such institutions in this vicinity. I refer to semi-charitable and endowed institutions and for such I believe the physician should be on the pay roll. For those purely charitable let us not be backward in giving such service as may be required, though it would make it much easier for all if the attending physician would be appointed for a term of say two or three months, and in rotation.

I have told you a few of the most flagrant cases that impose on us from a business point and no doubt many of you know of others. The ones I have mentioned are those of corporations who are abundantly able to pay, yet who, either from custom or knowing our weakness as business men, never pay even a fair wage for the services they receive. Our fee schedule did not include this class of corporations with the exception of the insurance companies. Just why they were included and not the others I do not know. Our fee schedule will never put us on a business basis, for the public at large has the aid of the physicians in making our schedule a joke. It is a common custom for those needing surgical work to go to several physicans for prices and every one knows there will not be two bids alike.

While it is true that the work delivered may not be of equal quality, the specifications are the same and a uniformity of prices should exist. The people in general know our weakness for holding one continuous bargain sale, and you can not blame them for taking advantage of their opportunities, even if we do fail in that direction. To illustrate my point I will tell you of an instance that was brought to my notice a day or two ago, and told to me by one of the parties in the transaction. This citizen has an income of $150.00 to $200.00 a month and whose family consist of a wife and two children. He said he went to two of our reputable men and got prices for taking care of his family by the year and finally accepted one bid of $25.00 and thought he was being robbed at that. He also informed me that he never paid the regular prices for a physician as it seemed like a waste of good money, when it was ever so much cheaper to get a doctor by the year. Our present fee schedule is no more lived up to than if it never existed, and about its only use is to let people see that we seldom charge the maximum amount.

Just where we stand is hard to determine, for we certainly are not business men, neither are we ethical physicians in every sense of the word according to the code of the A. M. A. I judge you all will be more or less willing to accept some proposition that will increase your bank accounts or at least help to have your account not written in red ink. To my mind there is but one way and that is to get together and form a business organization and demand remuneration for the services we give. One physician has advanced the idea of forming a union and joining the federated trades and that may be the solution, but an organization must come first.

While I was not here when several years ago there was a promise by the physicians to give up contract work, I am told the agreement was a farce or at least the promise was soon broken. Many of you are probably thoroughly disgusted with that one experience, and would hesitate to go into any such thing again, but if it was a good proposition then, why is it not so now, with the addition of putting the municipal offices and semi-charitable organizations on the list of those who must pay for our services. It will mean the addition of thousands of dollars to our professional incomes, for work that is now almost given away.

Each and every one of you would resent a personal imposition, yet as a whole we are grafted upon more than any other body of men, and it is done by municipalities and private organizations whose very existence depends largely upon its medical staff. We are simply told what will be given, and if we don't like it, leave it. Let us be the ones to put a price on our services, instead of some "noble this or worthy that" who, primarily, is running an organization for the money there is in it, and in one instance I am told is personally interested in the manufacture of the gaudy regalia and silver fringed banners used by his organization.

We are not making the most of our opportunities from a business standpoint and we are the losers. I believe the time is ripe for such a move on our

part, as every one of you have often heard, physicians doing contract work, say that they would give it up if every one else would. They do not relish their low fees, and after a time give up the work, and always with an increase in their prices. With their support for such an organization, we can not fail to succeed in our undertaking.

That the organizations now having need of our services will hinder such a move on our part there is no question, for they will object to the eye for an eye, a tooth for a tooth policy that they now so strenuously demand of us. Let us show some business ability in dealing with our daily affairs and exhibit the same keenness as captains of industry on whom we pride ourselves, when it comes to selling foundered horses or broken down automobiles to our brother practitioners.

Several of our physicians have told me that by bringing this question up again would probably promote dissension among our members, but if necessary, is it not better to have that dissension now and come to an understanding that we have very little ethics, than to go on pretending we are strict disciples of the code as laid down by the A. M. A., which, by the way, is a work of art, very Utopian and seldom followed?

If the cutting of prices, doing contract work and in general giving our services for practically no return, is to go on, I contend that the man who advertises, in the daily press, giving his prices for the day, is just as ethical as any one else and his open method of securing business should not cause him censure.

I would like to see this matter taken up with some seriousness, and see if a committee cannot draw resolutions strong enough to close all loop holes for getting around our business interests.

I trust no one will consider my remarks in a personal manner, for I should be the last one to make personal criticism as I have done contract work, but I do desire to show you a few of our altogether too plain mistakes made by a body of men who are not applying the first principles for business stability.

We need an organization that will in all sense of the phrase, follow part of Section 3, Article I of our Society constitution, which reads: "That the purposes of this Society shall be to guard and foster the material interests of its members, and to protect them from imposition."

PYELONEPHRITIS COMPLICATING PREGNANCY.*

By SAXTON T. POPE, M. D., Watsonville.

From the scant reference to this subject in current medical literature and text-books, we might be led to think that Pyelonephritis during gestation, is an unusual disease.

Even Osler, who usually is so explicit in the enumeration of all possible etiologic factors, fails to mention pregnancy as a prevalent cause of pus kidney.

Smith, in the *Journal of Obstetrics and Gynecology of the British Empire,* reports three cases, and handles the whole subject as if it were one of comparative novelty. He could collect only eighteen cases in literature. In my dealing with physicians, I never have heard the subject mentioned. This is all very strange. That cystitis, pyelitis and pyelonephritis are very common disturbances during the pregnant state, should be the experience of all who have the opportunity to observe women throughout their child-bearing period.

So clearly are these cases marked that even I, with all my stupidity, have seen six in a series of seventy-eight pregnancies, covering a period of five years' obstetrical work.

It takes no great amount of acumen to diagnosticate cystitis; yet how many of us recognize its frequency in pregnancy. The diagnosis of pyelitis, coming on after an attack of cystitis, is almost unmistakable in its symptoms and signs. The woman, after a period of vesical irritation, which probably she thinks is only part of the normal discomfort of her condition, experiences acute pain in her loin, hip, or lumbar region, has vesical tenesmus; passes purulent, or bloody urine, and has a chill, incident to the onset of fever. An examination reveals that she has a tender kidney, possibly also the ureter is sensitive to palpation; her urine has a trace of albumen, and contains miscroscopic blood, casts and pus. Her fever reaches 103° or 104°, and there is a leukocytosis from 15,000 to 20,000.

This should be a sufficiently clear picture to designate the disease as an inflammatory lesion of the kidney; without the aid of a cystoscopic examination, ureteral catheterization, and the more refined methods of urinalysis. And it is not necessary that the inflammatory process damage the renal parenchyma to such an extent that necrosis, multiple abscess formation, and surgical kidney result, before the diagnosis can be made.

The theory has been advanced, that ureteral compression is partially responsible for the infection of the renal pelvis; and probably this is correct. In pregnancy the uterus, by its increasing amplitude, obstructs the superior straits of the pelvis, and rests directly upon the ureters, as they cross the brim. A hydroureter is thus produced as well as a distention of the pelvis of the kidney.

With this mechanical insult to the upper renal tract, it is not surprising that an ascending infection take place from the already infected bladder.

The frequency of cystitis, is, itself, startling. In this series of seventy-eight pregnancies, I have recorded eighteen cases of inflammation of the bladder. This is 25%, or one woman in four has cystitis, while in the gravid state.

It is not all from the gonococcus, either; for from several of the urines, the colon bacillus, and a streptococcus, were the infecting bacteria.

I report, in outline, the six cases of pyelitis, or pyelonephritis, occurring in seventy-eight consecutive pregnancies.

(1.) E. W., aet 31, Primipara. Had an attack of cystitis when four months pregnant, with sympto-

* Read before the California Academy of Medicine, March, 1908.

matic recovery. During the seventh month of gestation, after unusual physical activity, the cystitis returned. She was confined to bed, given a urinary disinfectant and copious drafts of water. On the evening of the third day of her cystitis, she experienced an intense pain in the right lumbar region, which radiated down the groin. This was sufficient to warrant morphia. An examination of the urine, by catheterization, showed a trace of albumen, microscopically, blood, renal epithelium and coarse granular casts were present, with pus in abundance. The temperature was 104 —the leucocytes 20,000. The abdomen became tympanitic; the right kidney was palpable, and very tender. The appendix and uterine adnexa were normal. There was no evidence of disease in any other region; no edema. The fever continued, a septic type, for a week, then it declined as the pyuria diminished during the use of hexamethylene tetramine, milk diet, and an abundance of water. The vesical improvement was slower. A culture from the urine demonstrated the colon bacillus. Two weeks later she experienced a mild recurrence of the pyelitis. Under a continuation of urinary disinfection, the pregnancy progressed to full term without complication, though the puerperium was marked by a rise of temperature from some indefinite cause.

(2.) Mrs. J. B., act. 22. Bipara, in the fifth month of pregnancy came complaining of vesical irritation. An examination of the urine, showed a large quantity of pus, with no serum albumen. She was given appropriate treatment, but continued her household duties. One week later, she was seized with a very acute pain in the right flank, had a chill and an attack of vomiting. Upon examination I thought she had acute appendicitis, and advised her removal to a hospital. At this time she was very sensitive over McBurney's point. Through lack of confirmatory evidence, operation was deferred, although her leucocytes were 16,000, her temperature 102°, and the pain severe. The next day, the urine was examined, and showed a slight amount of albumen, some hyaline and cellular casts, blood corpuscles, and pus, containing streptococci. The pain diminished, and shifted to the right kidney region. Her temperature declined, and the condition of pyelonephritis was apparent, and not that of acute appendicitis. Resorting to urinary disinfection and the usual palliative measures, she recovered within ten days, and returned home to continue her pregnancy to term.

(3.) Mrs. F. S., act. 30. Bipara, had a mild recurrent cystitis, throughout much of her gravid term. She remained in fair health until after her confinement. One week subsequent to an easy delivery, her temperature rose to 103°, leucocytes to 18,000, and she experienced a sharp pain in the right lumbar region. The kidney was prolapsed, palpably enlarged and very tender. The pelvic viscera seemed otherwise normal; the generative tract was free from laceration and infection; the breasts were above suspicion. The urine by catheter contained pus, and a moderate amount of albumen. Hot fomentations, rectal support, urinary disinfection and milk diet, hastened a symptomatic recovery within two weeks.

(4.) Mrs. P. S., act. 24. Bipara, has pulmonary tuberculosis, in the first stage. When four months pregnant, and still affected with morning nausea, she developed cystitis. After suffering two or three weeks, she called me to relieve a severe pain in her side. Her temperature was 103°; she was perspiring profusely; the right kidney was extremely sensitive, and her pain required a hypodermic injection of morphin. The urine contained plenty of pus, and a trace of albumen, and streptococci. After two weeks of a mild septic fever and lumbar pain, her condition improved sufficiently for her to resume light household duties. The remainder of her pregnancy was uneventful. At present she is free from pyuria; her pulmonary lesions are quiescent, and there are no signs of a tuberculous kidney.

(5.) Mrs. J. W., act. 32, Bipara, called me for the first time during an attack of renal colic. She was six months pregnant. She had vomited. Her temperature was 103.5°; the right kidney and ureter were very tender, and the urine contained albumen, pus and considerable blood. With rest in bed, hexamethylene tetramine, saline catharsis, and copious drafts of water, she improved and on the third day passed light flocculent sodium urate concretions in the urine. She had a history of cystitis for a month prior to this sickness. Her confinement, by another physician, she says, was marked by a post partum fever and dysuria. A third pregnancy, through which I cared for her, was attended by a mild cystitis, but no complications. She has had gonorrhea, but there was no evidence of a gram-proof diplococcus in her pus corpuscles. This suggests nephrolithiasis, but considering the preliminary cystitis, and occurrence of fever, it is obvious that the renal sand was a recent precipitate due to the change in reaction and constituents of the urine.

(6.) Mrs. H. R., act. 26, Primipara, contracted gonorrhea, with salpingitis, before her impregnation and suffered with cystitis, more or less, during the first five months. At the sixth month, after spending long hours on her feet, as a waitress in a restaurant, she reported to me with considerable pain in her left loin, hip and back. Percussion over the left kidney gave her pain, and the viscus was very sensitive to pressure and apparently enlarged. Her temperature was 102°. Her urine, by catheter, contained the usual amount of pus, but in addition, showed serum albumen, leukocytic casts, and red blood corpuscles. Both gonococci and streptococci were evident in her urinary sediment. She was confined to bed for ten days, during which time she had repeated chills, sweating and fever. Upon two occasions she experienced severe renal colic, and passed large plugs of mucus and pus in the urine. She was given morphia, p. r. n., and methylene blue, in combination with hexamethylene tetramine. After two weeks of fever, the urine became clear of albumen, but still contained pus, microscopically. She had no post partum complications.

It will be noticed in these histories, that none of the cases were very severe; none developed pyonephrosis, or perinephritic abscess.

The treatment is simple and effective. We have, practically, only one urinary disinfectant: hexamethylene tetramine. Milk diet, saline laxatives, plenty of water, rest in bed, hot compresses and sedatives for the pain, constitute the treatment. Apparently the only difficult thing to do, is to remember that cystitis, and pyelitis, are of common occurrence, during pregnancy.

THE EXPERIMENTAL FEEDING OF BORACIC ACID TO WHITE RATS.[1]

By GEO. B. WORTHINGTON, M. D., Marysville.

As is well known, both borax and boracic acid have been largely used in the past as food preservatives, having been detected in varying amounts up to four per cent in many different food products. Milk, butter, cheese, fish and meats are frequently preserved in this manner, and hence it is of im-

(1.) Notes on this subject read before the Cooper College Science Club, August, 1907.

portance to determine whether or not such preservatives are harmful to the organism.

At the suggestion of Prof. Ophuls, of the Pathological Department of Cooper Medical College, a number of white rats were fed boracic acid for varying periods ranging from six and one-half to eight months with a view of determining particularly its effect on the kidneys, Harrington of Boston (2) claiming to have produced a chronic nephritis in cats by feeding a certain quantity of boracic acid daily for about four and one-half months.

Other observers have reported untoward effects from the use of boracic acid medicinally, and various disorders, such as skin lesions, anorexia, nausea and vomiting, albuminuria, diarrhea, etc., are said to have been due to the injection or topical application of this substance, or in the form of a solution or ointment. Borated foods are said to have produced similar symptoms.

In Harrington's experiment, one cat was kept as a control, receiving no preservative whatever, while six others were given average daily doses ranging from .5 grams to .8 grams.

Microscopical examination of the kidneys of several of the cats showed degenerative changes affecting especially the epithelium of the convoluted tubules and in some cases there were circumscribed areas of cellular infiltration found principally in the cortex. Some of the other organs were also said to show more or less evidence of chronic inflammation. The control showed nothing abnormal.

Although of value, this experiment can hardly be considered as demonstrating conclusively that similar lesions will invariably follow the ingestion of boracic acid in moderate quantities for a considerable period of time, because the number of animals used here was comparatively small and there was but one control. Then again we are not at all certain how frequently cats may suffer from slight degrees of nephritis under ordinary circumstances, and some animals may be more susceptible to such a substance than others of different species.

In order to arrive at some conclusion in the matter or even uncover the beginnings of this Gordian knot, the following work was done:

On September 26, 1906, ten white rats two months old and all apparently in a healthy condition were confined in as many roomy, well-ventilated cages and all of the same size. Two of the rats were reserved as controls, receiving exactly the same food and in like quantity, but without the preservative.

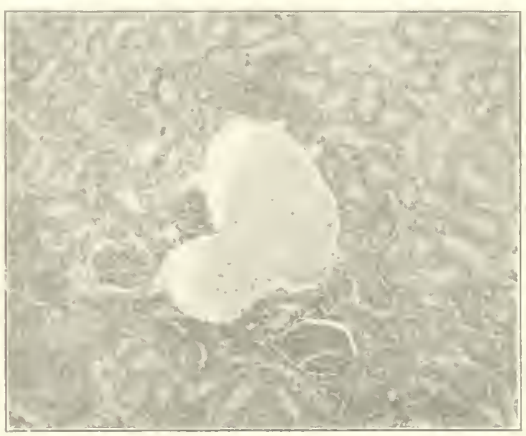
The food given was principally bread and milk with an occasional variety of small quantities of meat and cheese. The acid was dissolved in the milk and the rats fed as follows:

All the rats with the exception of the two controls were given one grain of boracic acid daily from September 26, 1906, to November 15, 1906, when it was discontinued for a week on account of apparent loss of weight and strength in the acid rats. Two or three died during this period and were replaced with rats of the same age. The deaths were probably partly due to exposure and post mortem nothing of unusual interest was found.

Apparently the borated food was extremely distasteful in spite of the relatively small quantity of preservative used as the animals would not eat until forced to it by hunger. This may partly explain the well-known fact that various canned articles of food often create a feeling of disgust where necessity compels their long use. The controls, on the other hand, were strong and well nourished and grew more rapidly during this period, and although subjected to the same exposure, none died.

After a week's feeding without the preservative the animals were in good condition and 1½ grs. each was given daily. In a few days, however, they were again looking peaked, so the daily dosage was reduced to one-half grain and kept at this point for over two months. During this time all the rats were well and active, those receiving the preservative attaining the same degree of development as the controls. One grain each day was then given and continued for three months. During this period the rats receiving preservative were perceptibly fatter than the controls and all took the food well.

Rat eight was now killed, but outside of a slight increase in cells near the glomeruli of the kidneys, nothing unusual was found.



Section of kidney of rat No. 10.

One grain daily was given for another month to the remaining rats and these, with the exception of rats nine and ten and the two controls, were then killed. After an interval of two months numbers nine and ten received two grains daily for three weeks, and with the controls were killed.

At autopsy the organs showed no particular change microscopically and with the exception of rats nine and ten, which received a double dose of the acid in the latter weeks, microscopic examination revealed nothing of importance.

The kidneys of the latter animals presented something of interest in that changes were found similar to those observed by Harrington in cats fed on boracic acid. No epithelial lesions were found however, but as the photographs show, there were considerable areas of cellular infiltration particularly in the neighborhood of the blood vessels and glomeruli.

(2.) Am. Journ. Med. Sciences 1904, Vol. I, 418.

Some sections showed also a more diffuse process with proliferation of cells of the interstitial tissue. The kidneys of the controls were found to be normal.

In proportion to the weight of the animals averaging about 150 gms., the average daily dosage, amounting to about .8 grain, was not excessive, except possibly in the case of rats nine and ten, which received double the amount during the last three weeks.

The fact that kidney lesions were found in both experiments is significant and of practical importance when, as Harrington remarks, "a man could ingest seven grams of boric acid by taking an oyster stew made with one pint of milk and ¼ pint of oysters, followed by ¼ pound of ham or corned beef."

Of course, we have no statistics as to the frequency of nephritis in these animals and further work is necessary for positive conclusions. This is of much importance when one stops to consider that milk in which this preservative is frequently used with a free hand, forms often the sole article of diet in many diseases in which the kidneys become seriously damaged. If this preservative is dangerous, it certainly can not but add to the injurious effect of morbific toxins.

We must also consider the effect it might have on the delicate tissues of the infant where milk in large quantities over a considerable period of time is so generally used in artificial feeding.

NEW AND NON-OFFICIAL REMEDIES.

(Continued from February.)

OXAPHOR.

Oxaphor is a 50 per cent. solution of oxycamphor. $C_8H_{14}\begin{matrix}/CHOH\\ \backslash CO\end{matrix} = C_{10}H_{16}O_2$, a derivative of camphor in which a hydrogen atom has been replaced by a hydroxyl group.

Actions and Uses.—Oxaphor is a depressant to the respiratory center, but is said to have no effect on circulation and secretion. It is recommended as a substitute for morphine in respiratory disorders, chiefly in cardiac dyspnea and asthma. It is said to have been used with advantage in renal affections, in emphysema, bronchitis, etc. Freedom from undesirable side-effects is claimed as an advantage over morphine. Dosage.—2 to 3 Gm. (30 to 45 grains) of oxaphor in a little water, wine, syrup or other desirable adjuvant. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

PHENACETIN.

A name applied to Acetphenetidinum, U. S. P. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

PHENOCOLL HYDROCHLORIDE.

Phenocoll hydrochloride, $C_6H_4.OC_2H_5NH(CH_2NH_2.CO)HCl = C_{10}H_{14}O_2N_2HCl$, is the hydrochloride of a synthetic base produced by the combination of phenetidin (paraamidophenetol) and glycocoll (amidoacetic acid). Phenocoll, $C_6H_4.OC_2H_5.NH(CH_2CH_2.CO)$, differs from acetphenitidin (phenacetin), $C_6H_4:OC_2H_5.NH(CH_3.CO)$, only in that one hydrogen atom in the acetyl group has been replaced by the NH_2 group.

Actions and Uses.—Phenocoll hydrochloride is similar to acetphenetidin (phenacetin) in its effects and acts as an antineuralgic and antipyretic. It is claimed by some observers to be less depressing than other coal tar antipyretics and is said to be prompt in its antipyretic action. It has been asserted to have an antiperiodic action and to be efficient as a substitute for quinine in malaria and free from unpleasant by-effects. In somewhat larger doses than are usually employed it is said to have a beneficial action in rheumatic fever. Dosage.—0.3 to 1.3 Gm. (5 to 20 grains) in powder, dissolved in water before taking; hypodermically, in 0.25 to 0.5 Gm. (4 to 8 grains) doses. Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

PHENOCOLL SALICYLATE.

Phenocoll salicylate, $C_6H_4.OC_2H_5.NH(CH_2NH_2.CO).C_6H_4.OH.COOH = C_{17}H_{20}O_5N_2$, is the salicylate of the synthetic base phenocoll (see phenocoll hydrochloride).

Actions and Uses.—It combines the therapeutic action of phenocoll (antipyretic, analgesic, see phenocoll hydrochloride) with those of salycylic acid (antiseptic antirheumatic). It is recommended in rheumatism, gout, chorea, pleuritis and fevers, especially in influenza. Dosage.—1 to 2 Gm. (15 to 30 grains).

PEGNIN.

The milk-curdling enzyme of calf's rennet, diluted with sugar of milk and sodium chloride.

Actions and Uses.—Producing a finely divided coagulum, it obviates the formation of the clotty curds which are liable to be produced when untreated cow's milk is taken as food. Cow's milk coagulated with pegnin as described below is said to be particularly serviceable for infant feeding and well adapted as a food for adults in stomach affections and in disturbances of the digestion incident to infectious diseases, in hyperacidity, etc. Dosage.—8 to 10 Gm. (120 to 150 grains) of pegnin are required for 1 liter (34 fluidounces) of milk, previously boiled and cooled to about 40° C. (104° F.). The mixture, after a brief shaking, is allowed to stand 2 to 3 minutes, or until it is completely coagulated, and then shaken vigorously during several minutes until the coagulum has been converted into a smooth, homogeneous mixture, and set aside in a cool place. It is transferred to the nursing bottle as required and heated in warm water to the body temperature (37.5° C., 99.5° F.) before feeding infants. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hochst a. M. (Victor Koechl & Co., New York).

PIPERAZINE.

Piperazine, $NH\begin{matrix}/CH_2CH_2\backslash\\ \backslash CH_2CH_2/\end{matrix}NH = C_4H_{10}N_2$, is a synthetic base obtained by the condensation of two $.CH_2CH_2.$ groups, with two $:NH$ groups.

Actions and Uses.—A part of the piperazine ingested passes undecomposed into the urine and is claimed by some to form a very soluble compound with the urinary uric acid; others state that the piperazine which is excreted is largely in combination with the stronger mineral acids. It has been shown that urine containing piperazine has no greater solvent power on uric acid than ordinary urine. It seems to produce no symptoms in man or animals, even when administered in fairly large quantities, although it is stated that, after large doses, tremors, clonic spasms and general depression have occurred. Piperazine has been recommended for the prevention of the formation of renal and vesical calculi

and for the relief of irritation of the bladder due to excess of uric acid in the urine and in cases of chronic gout, rheumatism, renal colic, etc. The attempt to secure the solution of uric acid in the body by this, as well as other remedies, has not been successful in the experience of many clinicians. Dosage.—0.3 to 0.6 Gm. (5 to 10 grains); daily dose, 1 to 2 Gm. (15 to 30 grains). Owing to its hygroscopic character, it is impracticable to dispense it in powder; it should, therefore, be dispensed in solution in water, plain or carbonated, but in quantities sufficient for a day's supply only. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). Also by Chemische Fabrik auf Actien vorm. E. Schering, Berlin (Schering & Glatz, New York).

POLLANTIN (Fall).

An antitoxic serum from horses treated with pollen toxin derived from ragweed.

Actions and Uses.—It has no pharmacologic action except the neutralization of the pollen toxin. The serum is not intended for use hypodermically. It is employed for the relief of hay fever; it may be used as prophylactic. Dosage.—One drop should be instilled by means of a pipette into the outer angle of each eye and one or two drops into one nostril, the other being kept closed, every morning before rising. If the first application causes sneezing or reddening of the mucous membrane of the eye, it is recommended to repeat the application, even for the fourth time, if necessary. Manufactured by Schimmel & Co., Miltitz, near Leipsic. (Fritzsche Bros., New York.)

POLLANTIN POWDER (Fall).

A powder obtained by evaporating, in vacuo, pollantin serum derived from ragweed toxin at about 45° C. (113° F.) and mixing with sterilized sugar of milk.

Actions and Uses.—The same as those of the liquid. Dosage. The powder is applied to the eyes by dusting on the conjunctiva and to the nose by snuffing into one nostril, the other being closed, a piece as large as a lentil. Manufactured by Schimmel & Co., Miltitz, near Leipsic (Fritzsche Bros., New York).

PURGATIN.

Purgatin, $C_4H_5(OH)\ (CH_3COO)_2O_2 = C_{18}H_{12}O_7$, is the diacetyl ester of trihydroxyanthraquinone (anthrapurpurin).

Actions and Uses.—It is a laxative, said to be free from by-effects. Being insoluble in dilute acids, it passes unchanged into the intestinal tract, where it is slowly split up and produces painless peristalsis. The urine behaves as it does after the ingestion of rhubarb. It has a reddish color and reduces Nylander's reagent. Purgatin is recommended as a mild laxative. Dosage.—0.5 to 2 Gm. (7 to 30 grains), according to individual idiosyncrasy, in powder, capsules or tablets, taken at night. Manufactured by Knoll & Co., Ludwigshafen a. R. and New York.

PYRAMIDON.

Pyramidon, $C_6H_5N\begin{matrix}/CO\text{————}C.N(CH_3)_2\\ \\ \backslash N(CH_3).C(CH_3)\end{matrix} =$ $C_{13}H_{17}N_3O$, is phenyl-dimethyl-dimethylamido-pyrazolon, a substitution product of antipyrine, $C_{11}H_{12}N_2O$, into the molecule of which a dimethylamino group, $N(CH_3)_2$, has been introduced.

Actions and Uses.—Pyramidon acts as an antipyretic and anodyne, like antipyrine, but is effective in much smaller doses. The action, while somewhat slower at the beginning, is more lasting. It is claimed to be devoid of harmful influence on the blood, heart or kidneys; to the contrary, it is said to stimulate the heart's action. It has been recommended particularly in the chronic fevers of tuberculosis, as well as in the acute febrile conditions incident to typhoid fever, erysipelas and pneumonia. Dosage.—0.3 to 0.4 Gm. (5 to 6 grains), most conveniently in the form of tablets, a single dose usually sufficing for 24 hours. Manufactured by Farbwerke, vorm, Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

PYRAMIDON NEUTRAL CAMPHORATE.

This compound, $(C_{13}H_{12}N_3O)_2.C_{10}H_{16}O_4$, is a neutral salt of pyramidon and camphoric acid.

Actions and Uses.—See pyramidon acid camphorate. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruning, Hoechst a. M. (Victor Koechl & Co., New York).

PYRAMIDON ACID CAMPHORATE.

This is an acid salt of pyramidon and camphoric acid, $C_{13}H_{17}N_3O.C_{10}H_{16}O_4$.

Actions and Uses.—The acid and neutral salts combine the antipyretic action of pyramidon with the antihydrotic action of camphoric acid. It is claimed that in these compounds the respective action of the component is modified, the antihydrotic effect of the camphoric acid being materially increased, while the toxicity of the pyramidon is diminished. In the neutral salt, the antipyretic action of the pyramidon predominates; in the acid salt the antihydrotic effect of the camphoric acid. They are particularly recommended in the febrile conditions of phthisis, attended by profuse sweating. Dosage. —Neutral camphorate, 0.5 to 0.75 Gm. (8 to 12 grains); acid camphorate, 0.75 to 1 Gm. (12 to 15 grains), given in powders or aqueous solution. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

PYRAMIDON SALICYLATE.

Pyramidon salicylate, $C_{13}H_{17}N_3O.C_7H_6O_3$, is an acid salt of pyramidon and salicylic acid.

Actions and Uses.—It is antipyretic, analgesic and antiseptic, combining the activity of its components. It is recommended in rheumatic and gouty affections, neuralgia, pleuritis, etc. Dosage.—0.5 to 0.75 Gm. (8 to 12 grains) in powder or aqueous solution. Manufactured by Farbwerke, vorm. Meister, Lucius & Breuning, Hoechst a. M. (Victor Koechl & Co., New York).

QUARTONOL.

A name applied to a mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain lime tonol, 0.148 Gm. (2¼ grains), sodium tonol 0.148 Gm. (2¼ grains), quinine tonol 0.03 Gm. (½ grain), and strychnine tonol 0.00033 Gm. (1/200 grain).

Actions, Uses and Dosage.—See Glycerophosphates. Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

SAL ETHYL.

Ethyl salicylate, $C_2H_5(C_6H_4.OH.COO) = C_9H_{10}O_3$, is the salicylic acid ester of ethyl alcohol and is analogous to methyl salicylate (oil of wintergreen).

Actions and Uses.—Sal ethyl has the same action as the salicylates, but is said to be less toxic. Dosage.—3 to 6 c.c. (5 to 10 minims) 3 or 4 times a day in the form of gelatin globules. Manufactured by Parke, Davis & Co., Detroit, Mich.

SALIFORMIN.

Saliformin $(CH_2)_6N_4.C_6H_4.OH.COOH$, is the salicylate of hexamethylenamine.

Actions and Uses.—Saliformin is a genito-urinary antiseptic and is recommended as a uric acid solvent. Its action does not differ materially from that of a mixture of hexamethylenamine and salicylic acid, for it is largely hydrolysed into its constituents in the presence of water. It has been recommended in cystitis, lithiasis and bacterial affections of the urinary passages, also in gout, etc. Dosage.—0.3 to 2 Gm. (5 to 30 grains) in tablets or elixir. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

The following articles will be added to the list of New and Non-Official Remedies:

Bromural (Knoll & Co.); Elixir Buchu, Juniper & Acetate Potass. P-M. Co. (Pitman-Myers Co.); Tablets Acet-Phenetidin Comp. P-M. Co. (Pitman-Myers Co.); Syrup Cannabis Comp. P-M. Co. (Pitman-Myers Co.); Veroform Antiseptic (Veroform Hygienic Co.); Veroform Germicide (Veroform Hygienic Co.).

SAN FRANCISCO COUNTY.

Dr. Jones discussing paper read by Dr. Blue on the pathology of plague:

I would like to supplement what Dr. Blue has said by a few words. Dr. Blue had practically despaired of securing any public interest in this subject, which we would think one of the most vital to any one living in San Francisco, when, about two weeks ago, he in company with a committee of the State Society had a joint session with the directors of the Merchants' Association and the Merchants' Exchange. As a result of that meeting, the fear of the wrath of God was put into the hearts of the Front street merchants, and they got very busy. They called meetings and had the Mayor appoint a committee of twenty-five, and to-day such men as Mr. Moore of the Chamber of Commerce, Mr. Symmes, Mr. Homer King, and some eight or ten or fifteen other prominent business men are devoting practically all of their time to this work. Some of them are working eighteen and twenty hours a day, trying to put before the public the facts in regard to the plague situation in San Francisco. I was startled yesterday when Mr. Moore, with whom I have been to a number of these meetings, said to me, "What are you doctors doing?"

I said, "We have had a number of papers on the plague—and I guess that is all." He said, "Why do you not do exactly what we merchants are doing and put the facts before you patients, as we do before our employees? When I take the trouble to go down and call together 250 employees and tell them exactly the situation, and tell them that this city is apt to be quarantined, why do not the doctors make efforts of the same kind?"

Then I began to think what had been done and how many physicians have said anything to more than one or two of their patients in regard to the plague situation in San Francisco to-day. How many physicians know whether the garbage men empty the garbage into their wagons or into a gunny sack on the back porch? How many of our own profession know whether the housewife, his own or the one in the house in which he lives or the hotelkeeper, keeps garbage in a metal can tightly covered? These are very lowly, humble, dirty questions, but are the vital questions in the whole plague situation. Where the rat cannot get food the rat will not go, and if he cannot get food on the back porch he is not going there. If there is no food in the cellar he will not go there. If he cannot get food anywhere around the house he will take the poisoned food or go into the traps. It is distinctly up to us to take this question up with all our patients and every person with whom we come in contact, and teach these people that the rat food must be kept away from the rat. If we do otherwise we are not doing our duty. In the first place, in our own house, and secondly in the house of every one with whom we come in contact. These citizens have published a circular and have printed cards giving in a few words the plague conditions here to-day and the necessary things to be done in regard to the care of garbage and its disposal, with regard to the killing of rats, giving the address and telephone number of the division stations of the Marine Hospital Service in this city. I would earnestly request every one to get a supply of these circulars and cards and see that every one of our patients knows within the next few days that the plague exists and that nearly 2 per cent of the rats caught are plague-infected rats. Within a week a rat was found and combed carefully and a flea from him caught and the plague bacillus demonstrated in the flea. If the conditions existing in this city to-day maintain for sixty days, this city will be quarantined within four months, and if we do not teach our patients and the people with whom we come in contact, these facts, we cannot expect to eradicate these conditions. How can we ask busy merchants to teach their employees if we do not teach our patients?

Dr. Pischel: Dr. Jones has told us that we must look out for the garbage man and that the housewives must see that the garbage man removes the garbage properly. Most housewives are afraid to say anything to the garbage man, and have a very good reason, because the garbage man simply does not come any more if they do speak to him. It is of great importance that the housewife should know that the garbage man has to come and I would like to hear what the law is in this regard. How can the housewife help herself when the garbage man is not inclined to come any more after he has been spoken to?

Mr. Payot: As the doctor has said, the housewife is afraid to complain to the garbage man. We are now trying to have the city take care of the collection and disposal of the garbage. We do not know how far we can succeed in this. It is a question of money and you all know the condition of the municipal treasury. It is intimated that the collection and disposal of garbage would cost about $600,000 a year. The only way to bring this about would be by a charter amendment. We did not think of this at the last election. We will not be able to relieve the householder of the expense, but we can endeavor to see that garbage is properly collected.

Dr. Hunkin: I am sorry to hear one medical man so pessimistic with regard to the work of the profession. The probabilities are that most of the medical men have been doing their duties during the last five or six years and particularly during the last six months. Attention has been called to the relation of the housewife to the garbage man, and it has been found that when she antagonizes the garbage man he does not come back. That is the great trouble I have found when talking to families with regard to ridding the city of rats. When I have spoken to the householders upon this plague question, they always retaliate by quoting statements from the Chronicle, saying that there is no plague and never has been any plague in this city. If we are to do what we wish to do, we must catch that rat, the Chronicle.

Dr. Blue, closing discussion: We make no distinction between rats and mice. We do not find many infected mice because they do not migrate. If the rats come into a house, the flea from the rat will live on the mouse and the mice can thereby become infected. In regard to cats and dogs, I would say that cats and dogs as pets in plague times are dangerous, but if kept on the outside, and if good rat catchers, they are probably valuable. Do

not let them come into the house or let children play with them. As to chickens, they ought to be ruled out of the city unless they can be kept in rat-proof quarters and fed there. It is impossible to insist that the restaurants give up their chickens because they must have a large number on hand all the time.

(Dr. Snow read a paper on dairies and milk supply, well illustrated by lantern slides of photographs of dairies, clean and otherwise, mostly "otherwise.")

Dr. Kibbe: I think the subject was very well covered except one point, and that is the making of this crusade a permanent one. At present it would seem that the certification should be issued by the County Medical Society on the recommendation of a joint committee established on a permanent basis and composed of members of the County Medical Society, as well as of members of a civic association organized to improve the city milk supply. Unless we can form a permanent certifying committee, the labor expended on the present agitation will be of no lasting avail. I feel it never can be permanent until we have a certifying body which is responsible and which is not changed from year to year. With the present method of annual appointment of the whole committee on milk, different people may come in with indifferent attitudes. This point of the stability and permanence of the milk commission ought to be impressed upon the County Medical Society.

Dr. Gunn: Undoubtedly this milk question is a very important one at the present time. Every one will realize that some of the dairies really should not be allowed to turn their milk into San Francisco. At the same time there are dairies which are supplying good milk. I believe that this movement started by the California Club will eventually give San Francisco good milk. The solution of some of the problems involved will be brought about by slight changes in existing ordinances, and with these changes we will be able to provide good milk, providing the community continue to support the movement. The dairies spoken of by Dr. Snow are all out of this county, but I daresay if you go to many of the dairies in this county, you will find conditions even worse than any shown here to-night, in the general sanitary condition and character. The Health Office has met with many difficulties. We have made many arrests and have had the courts full of cases. In the month of November all the cases were dismissed. In December there were a few convictions, and last month a large number of convictions. To-day the milk supply is better than for a considerable time past. One of the most important things is to provide certified milk, then the people will know where they can get good milk, and it will help raise the standard of other dairies.

Dr. Spalding: There seems to be a misunderstanding about the work done by the County Medical Society. I doubt if many of the members know it, but there has been a milk commission in existence for nearly four years. It was more than three years ago that a milk commission was appointed by the County Medical Society to obtain a small amount of really good milk, which could be recommended by physicians for babies. That commission has had its ups and downs. It has done good work, but it has met with earthquakes and certain other misfortunes which have made it an irregular body. It is a risky thing to appoint a milk commission from a body of this kind unless the whole medical society will stand back of it. We started out three years ago and obtained two dairies, which promised to do this work. One man put $100,000 into his dairy and you saw the pictures of it to-night, and that man lost his $100,000. He lost it partly because the County Medical Society did not back him up. We told that man that if he would turn out the milk as we wanted it every month, that we would notify every member of what he was doing. He went ahead on the supposition that every one would be notified, and that there would be a large demand for the services of these two dairies where certified milk could be had. Every member of this society was notified each month, and should have recommended that man's dairy but evidently many did not. Now we are going to start out again, and the milk commission of this society is going to work to find a better class of dairymen and beg these men to put a little more cleanliness, and a little more work and a little more money into their dairies, and we are going to promise these men again that the County Medical Society is going to back them up. Perhaps the dairyman who does as we ask him is going to ask us for a guarantee that he will be assured of a certain number of customers, and if we ask you to sign such a guarantee saying that the milk will be sold at 15 cents per quart, I hope that you will not say that you cannot pay that much. Certified milk for babies means a reduction in infant mortality, but unless you back up the dairyman you cannot expect him to put his money into it in the face of the failures of the past. We will shortly send circulars around asking members for a list of prospective customers so as to find out the probabilities of your backing us up, and we want it known that every one of the members of this society must endeavor to get customers for any dairyman that we can get to produce certified milk. We are also going to try to get the California Club to back us up. If we can get the promises of 2,000 quarts per month we can get two or three dairies to put money into the thing so that we can get good milk.

Dr. Snow, closing discussion: I had one purpose above any other in presenting this matter tonight, and that was to show you the actual facts as they exist up and down this valley with regard to a large number of the milk producers. I think that as a matter of business organization our milk supplies have been badly mismanaged. There is no city in this part of the state except San Francisco, which is big enough to put the screws on the dairymen and make them do anything. If Palo Alto or San Jose decided to have pure milk and tried to enforce adequate regulations, the dairymen would care very little as they can sell their milk in San Francisco. But if San Francisco says to the dairymen, "We will not admit any milk into San Francisco which is not clean," then the dairymen are going to have no place to sell the bulk of their milk. San Francisco must begin this question. She might say to the Santa Clara and San Mateo dairymen, "By the first of next June you must have such and such specified conditions if you wish to continue sending milk here." When she has these counties conforming to these regulations, she can begin with Marin county and tell them that the same thing must be compassed by August 1st, and then give the communities across the bay until October 1st to get in line. If San Francisco constitutes certain standards, then Palo Alto may do the same. Examinations of the fat content and bacterial-counts are not going to improve conditions very much. You must have your inspectors in the field. I think that it is entirely possible to make this problem a co-operative affair and make the inspector a county officer. We ought to protect ourselves and protect our inspectors.

COOPER COLLEGE SCIENCE CLUB.

Dr. Hewlett reported the following cases: The first history which I wish to report is that of an old veteran who was examined at the medical clinic on January 3d, 1908. He complained of stomach trouble. His past history was unimportant except for a syphilitic infection about twenty years ago.

His present illness began about six months ago with severe pain in the back, of a boring character which kept him awake nights. At about the same time he began to have trouble with his stomach, consisting of pain and occasional vomiting. Had lost seventy pounds in weight. The physical examination was negative except for a dilation of veins over the upper left chest and upper left arm. The blood showed a secondary anemia of moderate grade. The stomach analysis showed an absence of free hydrochloric acid and an absence of lactic and all signs of dilation or retention. It was suspected that he had a carcinoma of the stomach, and on account of the dilated veins over the upper left chest, his back was carefully examined for signs of metastases in the posterior mediastinum. This examination proved negative, but an X-ray plate showed a large, well-defined shadow above and to the left of the heart shadow, which appeared to be a large aneurysm.

The patient was not seen after the X-ray plate had been developed, but it has been learned since that he died suddenly. Autopsy showed a carcinoma of the stomach. The cause of death was the rupture of his aneurysm into the left pleural cavity. The aneurysm was situated on the descending aorta.

The second patient was discovered accidentally at the nervous clinic where he had gone on account of epileptiform attacks. These had begun about ten years ago when he was forty-five years old, and they have occurred since then at intervals of about three months, though he has had none for the past year. He does not know their cause. He does hard work, but at times gets somewhat short of breath and has dizzy spells with ringing in the ears. There has never been any swelling in the feet. In spite of the absence of symptoms, this man has pronounced physical signs. To the right of the upper sternum is a visible pulsation which shows on palpation a tremendous systolic thrill. Such a thrill conveyed to the vessels of the neck and to the upper sternum is present in only two conditions practically, aortic stenosis and aortic aneurysm. There is a definite dullness to the right of the upper end of the sternum. The X-ray plate shows an enlarged heart and in addition an unusual shadow in the region of the aortic arch. On account of the dullness and the X-ray plate, I believe that we are here dealing with a small aneurysm of the ascending portion of the aortic arch. His epileptiform attacks came too late in life to be true epilepsy. They probably depend upon arterial disease.

AMENDMENT TO CONSTITUTION.

(Second Publication.)

The enactment of a new medical practice act has made it necessary to amend that portion of Article VI, Section 1, of the constitution which reads as follows: "Five members of the Board of Medical Examiners and three alternates." The following amendment is therefore introduced to take the place of the words quoted above from Article VI, Section 1: **Examiners, or nominees for appointment as Examiners on the Board of Medical Examiners, as may be required by the laws of the State of California governing the practice of medicine.**

SMALLPOX.

Smallpox in the United States as reported to the Surgeon-General, Public Health and Marine Hospital Service, December 28, 1907, to March 6, 1908.

Place.	Cases.	Deaths.
Alabama	48	0
Arizona	23	0
California	257	0
Colorado	81	0
Connecticut	3	0
District of Columbia	64	0
Florida	5	0
Georgia	1	0
Illinois	704	0
Indiana	353	0
Iowa	18	0
Kansas	318	0
Kentucky	60	0
Louisiana	54	0
Maine	10	0
Maryland	3	0
Massachusetts	11	5
Michigan	128	0
Minnesota	1762	4
Mississippi	34	0
Missouri	186	2
Montana	27	0
Nebraska	115	0
New Mexico	15	0
New York	264	0
North Carolina	76	0
North Dakota	40	0
Ohio	115	1
Oklahoma	7	0
Oregon	71	0
Pennsylvania	8	0
South Dakota	26	0
Tennessee	186	0
Texas	85	1
Utah	143	0
Virginia	85	0
Washington	135	2
Wisconsin	61	0
United States, grand total	5582	15

TO AMERICAN PHYSICIANS INTERESTED IN THE ALCOHOLIC PROBLEM.

During 1907 over 200 papers, lectures and pamphlets were published in Europe and America concerning alcoholism and inebriety from a purely scientific point of view. Many of the authors complain that these papers were practically lost, because they did not reach medical men interested in the subject. The Scientific Federation Bureau, organized in Boston two years ago for the purpose of collecting and disseminating the facts concerning the alcoholic problem, proposes to secure a list of medical men who are interested in the scientific study of the alcoholic problem. This list will be valuable for authors and students who wish to address a special audience of physicians, not only to increase their interests, but to stimulate more exact studies of the subject. Such a list will enable the bureau to extend its work of collecting papers and reprints of all that is written, and keep authors and readers familiar with what is being done. All physicians who are interested in the scientific study of the alcoholic problem and research work, and the studies of medical men at home and abroad, are urged to send their names and addresses, so as to be registered and receive copies of papers and abstracts from authors, and from others who may wish to have their papers read by interested persons. As chairman of the board of directors of the Scientific Federation Bureau, I earnestly request all physicians interested in this study to send me, not only their own names, but the names of other medical men who would care to keep in touch with the new medical literature coming from the press, and know the latest conclusions in the scientific world concerning this problem.

Address, T. D. Crothers, M. D., Chairman, Hartford, Conn.

SMITHSONIAN INSTITUTION.—HODGKINS FUND PRIZE.

In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man." In furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of $1,500 is offered for the best treatise "On the Relation of Atmospheric Air to Tuberculosis." Memoirs having relation to the cause, spread, prevention, or cure of tuberculosis are included within the general terms of the subject.

Any memoir read before the International Congess on Tuberculosis, or sent to the Smithsonian Institution or to the Secretary-General of the Congress before its close, namely, October 12, 1908, will be considered in the competition.

The memoirs may be written in English, French, German, Spanish, or Italian. They should be submitted either in manuscript or typewritten copy, or if in type, printed as manuscript. If written in German, they should be in Latin script. They will be examined and the prize awarded by a committee appointed by the secretary of the Smithsonian Institution in conjunction with the officers of the International Congress on Tuberculosis.

Such memoirs must not have been published prior to the Congress. The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

No condition as to length of the treatises is established, it being expected that the practical results of important investigations will be set forth as convincingly and tersely as the subject will permit.

The right is reserved to award no prize if in the judgment of the committee no contribution is offered of sufficient merit to warrant such action.

Memoirs designed for consideration should be addressed to either "The Smithsonian Institution, Washington, District of Columbia, U. S. A.;" or to "Dr. John S. Fulton, Secretary-General of the International Congress on Tuberculosis, 714 Colorado Building, Washington, District of Columbia, U. S. A." Further information, if desired by persons intending to become competitors, will be furnished on application.

CHARLES D. WALCOTT,
Secretary of the Smithsonian Institution.
Washington, D. C., February 3, 1908.

LEHN AND FINK'S ADVERTISING METHODS.

The advertising methods of the firm of Lehn and Fink, New York City, are discussed in the Journal A. M. A., February 29th. Communications were received by the Journal from two physicians, in different parts of the country. One correspondent enclosed a letter showing the firm's methods of reaching physicians; the other shows the attitude of Lehn and Fink toward the public. The letter to the physician first refers to an article written by him in which he mentioned phenolphthalein, and then goes on to say: "From the wording of this portion we infer that you may have mentioned the preparation Purgen also, and that probably the editor cut it out when the article was published—in fact, we have been told as much. Under separate cover we are sending you the latest issue of our publication, 'Notes on New Remedies,' which is just off the press. We should have been very pleased to reprint in full your paper in our 'Notes' had it not been mutilated in the way we assume. We accordingly desire to ask if you can not find it within your time and inclination to prepare an original communication, treating of the use of Purgen in intestinal troubles, for publication in the next issue of 'Notes.' We should value such a paper highly, and we are sure our readers, who number some 16,000 among the most representative of the medical profession, would likewise appreciate the information that you may give. Our customary remuneration for papers of this character is $10 per printed page, which we are pleased to offer you if the offer meets with your approval."

The Journal's other correspondent writes that pamphlets advertising "Piperazine Water" were sent to one of his patients. One pamphlet contained an article by Dr. Edward P. Adams, and stated in a footnote that he is at liberty to give advice by mail. Commenting on these communications, the Journal says that this causes one to wonder whether the twelve-page disquisition on the "Treatment of Gout and Rheumatism with Piperazine," by Dr. Edward P. Adams, in "Notes on New Remedies," is really what it purports to be, a scientific article of general interest to the medical profession or merely a $120 testimonial made-to-order "by request." One is doubly suspicious, too, that the four-page article in the same publication on "The Internal Treatment of Gonorrhea" (with Gonosan), represents but $40 worth of "copy." This Gonosan testimonial was written by the renowned A. H. Ohmann-Dumesnil, A. M., M. E., M. D., Ph. D., etc., editor of the now defunct St. Louis Medical and Surgical Journal, of unsavory reputation. Possibly, however, Lehn & Fink vary their schedule of rates for such testimonials according to the professional standing of the authors furnishing them.

COUNTY SOCIETIES.

SAN DIEGO COUNTY.

The San Diego County Medical Society has decided to take up the course of post-graduate work, as recommended by Dr. McCormack of the American Medical Association. The Society is to meet on the first and third Fridays of each month, and members who undertake to conduct regular lines of work will be fined if they do not appear at the stated times and perform their several tasks.

R. E. AUSTIN, Secretary.

PLACER COUNTY.

The Placer County Medical Society met in the office of the president, Dr. R. A. Peers, at Colfax, Saturday evening, February 22nd. While the attendance was not large, it was one of the most interesting and instructive meetings held by the society for a long time.

Dr. Jones, of Grass Valley, read a paper on the treatment of gall stones. The subject was very thoroughly treated, from a medical as well as from a surgical standpoint. The paper was discussed by Doctors Peers, Mules and Fay.

Dr. Mules, of Auburn, read a paper on chloride retention in nephritis. This is a subject on which the busy physician is not, as a rule, very well posted, but Dr. Mules showed, not only in his paper but in the discussion that followed, that he is thoroughly familiar with every phase of it.

Dr. Hembree was to have read a paper on the treatment of neurasthenia, but was not able to be present.

After adjournment the members sat down to a bountiful lunch that had been provided by Dr. Peers.

At the business meeting held in Auburn December 7th, the following officers were elected for the year 1908: President, Dr. R. A. Peers, Colfax; vice-president, Dr. J. H. Mules, East Auburn; secretary, Dr. G. H. Fay, East Auburn; treasurer, Dr. J. F. White, East Auburn; delegate, Dr. R. F. Rooney, Auburn; alternate, Dr. J. H. Mules, East Auburn.

G. H. FAY, Secretary.

SACRAMENTO COUNTY.

The Sacramento Society for Medical Improvement met March 17, 1908, in the office of Dr. W. A. Briggs, to celebrate the fortieth anniversary of its founding, on March 17, 1868. There were present of the original charter members Dr. W. R. Cluness of San Francisco and Drs. H. L. Nichols and G. L. Simmons of Sacramento, Dr. H. L. Nichols in the chair as senior active member, in the absence of Dr. T. J. Cox.

In addition to a full representation from the Sacramento Society, which now numbers 59 members, there were present as guests Drs. D. W. Montgomery of San Francisco, Lawhead of Woodland, Bates of Davisville, Thompson of Gridley, Powell of Marysville, Cluness of San Francisco, Hoisholt of Stockton, O'Brien of Richmond, and Arbogast of St. Helena.

The usual routine business of the evening was postponed for a month and the society listened with great interest to an address by Dr. Montgomery of San Francisco, on "The Stimulant Used in Cooking."

After the address and an informal discussion the officers elected by the society for the coming year, Dr. Duncan McLean, President, and Dr. E. C. Turner, Secretary, were installed and an adjournment was taken to the Sutter Club, where a feast for mind and body kept the entire assemblage busy till early hours, violating all the principles laid down by Dr. Montgomery's paper earlier in the evening.

E. M. WILDER, Secretary.

SANTA CLARA COUNTY.

The regular society meeting was held March 18th at the St James Hotel, with twenty-five members present. Dr. Paterson brought a surgical case before the society, showing the result of surgical treatment for an imperforate rectum. The paper for the evening was given by Dr. Wallace I. Terry of San Francisco, and entitled "Indications for Operations on the Stomach." Several members took part in the discussion that followed the paper, Dr. Terry closing. The members present were unanimous in thanking Dr. Terry for his paper, which has been sent to the Journal. The society endorsed the resolutions adopted by the San Francisco Medical Society in regard to the termination of the services of Dr. Dudley Tait with the Board of Examiners, and a notice of this action of this society be sent to the State Society secretary.

After the meeting adjourned, those present repaired to the banquet hall, where refreshments were served.

K. C. PARK, Secretary.

REGISTER CHANGES—

Those members who desire to keep their Registers corrected up to date should check this list carefully. In the following will be found all the official changes (in California) received from the 15th to the 15th.

Allen, Lewis W., from 1059 O'Farrell st., to Lincoln Bldg., S.E. cor. Powell and Geary sts., San Francisco. **Ardenyi, Joseph**, from 1117 Turk st. to 1246 Eddy st., San Francisco.

Brown, T. Floyd, from 314 W. 50th st. to 436 W. 33rd st., Los Angeles.

Cottrell, Chas. C., from Lane Hosp., San Francisco, to Fortuna, Humboldt Co.

Dixon, Thos. H., from Knights Landing, Yolo Co. to ——?, Washington.

Ford, Campbell, from 1153 Devisadero st. to 742 Green st., San Francisco. Foster, Ernest, from Winters, Yolo Co., to ——?

Gochenauer, David, from San Diego to ——?, Los Angeles. **Goodfellow, Geo. E.**, from 1059 O'Farrell st., San Francisco, to Guaymas, Mex. **Gregory, C. L.**, from Box 672, Oakland, to Lock Drawer "T", Newman, Stanislaus Co.

Hastreiter, Rolland F., from 3605½ Vermont ave. to 3403 Vermont ave., Los Angeles. Heryford, Henry W., from Millville, Shasta Co., to Anderson, Shasta Co. **Hulen, Vard H.**, from 1380 Sutter st., to Shreve Bldg., San Francisco. Hull, Philo, from McArthur, Shasta Co., to Mountain View, Santa Clara Co.

Lawrence, Arthur John, from Guinda, Yolo Co., to ——? **Levin, Z.**, from 1059 O'Farrell st., San Francisco, to ——? Liftchild, Judson, from Covelo, Mendocino Co., to Ukiah, Mendocino Co.

Newman, Alfred, from 1707 Octavia st., to 3447 Clay st., San Francisco. **Newton, Frank C.**, from Oat Hill, Napa Co., to St. Helena, Napa Co.

Pounds, Thomas C., from San Bernardino to Arrowhead Springs, San Bernardino Co.

Root, R. R., from Pima, Ariz., to Corona, Riverside Co.

Sartori, Henry J., from 1915 Van Ness ave. to 460 Montgomery st. Savage, Philip M., from Sanger, Fresno Co., to Chino, San Bernardino Co. **Stephens, W. Barclay**, from 1121 Devisadero st., to Shreve Bldg., San Francisco.

Tapley, J. F., from Pacific Grove, Monterey Co., to Grass Valley, Nevada Co.

Watt, F. W., from Placerville, El Dorado Co., to Pinogrande, El Dorado Co. Wheeler, Chas. H., from Redding, Shasta Co., to Fall River Mills, Shasta Co. **Williams, C. C.**, from 401 S. Hope st., Los Angeles, to 767 1st st., Pasadena.

New Members.

Alameda County—**Alexander, A. A.**, Union Sav. Bk. Bldg., Oakland; **Bell, H. D.**, 1168 Washington st., Oakland; **Ellis, J. A.**, Citizens' Bank Bldg., Alameda; **Higgins, I. W.**, First Nat. Bk. Bldg., Berkeley; **Irwin, W. H.**, MacDonough Bldg., Oakland, and **Piper, H. E.**, Livermore.

Contra Costa County—**Fisher, C. V.**, Antioch; **Leech, Claude R.**, Walnut Creek, and **Merrithew, E. W.**, Martinez.

Los Angeles County—**Hayes, Nellis S.**

Mendocino County—**Sullivan, Walter H.**

Napa County—**Ogden, G. W.**, Napa.

Sacramento County—**La Erie Edmond**, 4th and K. sts., Sacramento.

Santa Clara County—**Kirk, J. H.**, Palo Alto; **Pope, F. S.**, Ryland Bldg., San Jose.

Sonoma County—**Temple, Jackson**, Santa Rosa.

Yolo County—**Maulhardt, Adolph Antone**, Oxnard.

New Names.

Humboldt County—Mercer, Clarence N., Eureka, Univ. of Jefferson, Penn., '07 (c) '07.

Deaths.

Root, E. S. S., Big Oak Flat, Tuolumne Co.

Zimmerman, G. W., Woodland, Yolo Co.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -
Butler Building, San Francisco.

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI MAY., 1908. No. 5

EDITORIAL NOTES.

CORONADO MEETING.

The Thirty-Eighth Annual Meeting of the Medical Society of the State of California, just held at Coronado, was a notable one and eminently successful. Seldom has a meeting been held that more completely marked good feeling and good fellowship, with a total absence of all bickerings and petty squabbles. All the official acts of the House of Delegates were with practical unanimity and with only such differences of opinion as must always exist among men so long as we do not all think alike. The scientific program was of rare excellence and had been most carefully prepared. The President, Dr. George H. Evans, announced at the opening of the session that he would rigidly enforce the time limit on papers and discussions as fixed by the program committee; and he did so. The result was evident before the close of the first morning's session and was gratifying in the extreme. Tiresome papers and endless wordy discussions were eliminated; short, snappy, interesting discussions resulted. This rigid enforcement of the fixed time limit can not be too strongly urged upon all future presiding officers, for in no other way can all be given an equal chance to present their views and in no other way can a program be carried through, as was the case this year, absolutely on schedule time with no one disappointed and no papers left out or read to empty benches. Unfortunately, a few members had signified their intention

to present papers and did not appear at the meeting to do so. They should take thought to themselves in this matter and remember that such conduct may seem but a trivial matter to themselves, but that possibly it may upset the whole value of a symposium or may disappoint many who perhaps have come to the meeting to hear the particular paper in question. A good and sufficient excuse should be made by them to the chairman of the program committee, and an apology is certainly in order. Furthermore, the program committee should consider the advisability of excluding such members from place in future programs.

PURE FOOD.

The exhibition of the Pure Food Commission was a revelation of the enormous amount of work done by the Commission and attracted the attention of everyone present. The Commission is entitled to the thanks of the entire Society for the manner in which it has inaugurated this most important work and the great progress it has made during the past year. As will be seen from the minutes, the name of the commission has been changed to the public health committee, of five members, which committee will carry on the work so well begun. Copies of public health bills and ordinances, national, state and municipal, from all parts of the country, have been laboriously gathered together and were on exhibition. The milk and water supplies were treated by photographs in large number showing clean and unclean plants. Nor had food adulteration or improper preservation been forgotten and the edifying specticle was presented of a lunch table, every article on which was either adulterated, sophisticated, or preserved by some injurious ingredient. The plan for continuing the work is through a committee whose members shall serve five years, thus preserving the integrity of the personnel of the committee, and securing the co-operation of the county organizations by means of auxiliary members or sub-committees in the various counties. Every possible aid and co-operation should be given to this most important movement and to the members of the committee who have performed their task with such remarkable success.

THE NEW OFFICERS.

As provided by the constitution, the election of officers was taken up by the house of delegates as the first order of business at the second session, Wednesday, April 22d. San Jose and Del Monte were nominated for the next annual meeting, and the former place chosen by a large vote. Dr. King, of Los Angeles, then nominated Dr. W. W. Beckett, of Los Angeles, for president; the nomination was seconded by Dr. F. Dudley Tait, of San Francisco, and as there were no other nominations, the secretary was instructed to cast the ballot of the House of Delegates for Dr. Beckett for president for the ensuing year. The other officers were elected in the same manner and are as follows: First vice-president, Dr. Fred. Baker, San Diego; second vice-president, Dr. E. G. McConnell, San Francisco; secretary, Dr. Philip Mills Jones, San Francisco; all the retiring councillors were elected to succeed themselves, as follows: Drs. Ewer, Oakland; Osborne, Santa Clara; Mays, Sausalito; Grosse, San Francisco, and Pottenger, Los Angeles. The full minutes will be found elsewhere in this issue of the JOURNAL and from them the various elected committees can be ascertained.

THE A. M. A.

With each passing year the American Medical Association grows, not alone in numbers nor in the circulation of its *Journal*, but in influence upon the history of medicine. The meeting this year is of unusual importance for several reasons. It is to be held in Chicago, the city of the official home of the Association and where its material possessions are located, and also the Association has not met there for many years—over a quarter of a century, if memory serves. The regular sessions will be held from June 2nd to June 5th and of course will not fall behind the standard of excellence which has been set for them in past years. In addition to these official sessions, however, we understand that a series of clinics is being arranged which will last for several weeks after the regular meeting and which will be of the greatest value to those who can avail themselves of the opportunity of thus taking a short postgraduate course. This scheme of postgraduate work fits in so well with the modern idea of medical organization for improvement and for the benefit of the public health, that one must wonder that it has only so recently been undertaken by county societies; it is certainly most fortunate that something of the same idea is to be placed before the members of the Association at the coming meeting. Every one of us who can possibly do so should attend this meeting of the A. M. A. —and in fact every meeting—and we should not allow some trifling thing to keep us away. Remember the place—Chicago—and the time—June 2nd-5th.

STRAW MEN.

It is an ancient practice, when one is having the worst of a discussion or argument, to construct some fictional statement, allege that the other fellow has put it forth and then attack this visionary thing which has been created for that very purpose as though it really was a vital issue. That is what has been termed putting up and fighting "straw men." These few words are called forth by some of the absurd attacks which have recently been made upon the council on pharmacy and chemistry of the A. M. A. Sundry of the independent (?) medical (?) journals of the country have howled and wailed because the council is not composed o physicians, has few or no physicians on it, and is

not giving out therapeutic advice; they claim that the council can not do its work unless it is made up of doctors or has a number of them within it. But just stop a moment and think about it; think first of its title; it is a Council on *Pharmacy* and *Chemistry*—mark you, *not* therapeutics. It had its origin in a more or less general demand to know the actual *composition* of remedies and the truth as to the statements made by the interested manufacturers in foisting them upon the medical profession. In other words, the council is not intended for a therapeutic-advice shop, but it *is* a truth foundry. Physicians are not practical chemists nor are they acquainted with the rfinements of pharmacy. In order to determine the truth about any remedial preparation, pharmacists and chemists must examine it and investigate its properties and then say what it is and whether the truth about it is being told to the medical profession. As a result of the work of the council, we now know that there is not a single pharmaceutical manufacturing house in the United States—mark you, *not one,* that has told the absolute truth about all of its preparations. Any one who has even casually followed the exposures published in the *Journal* A. M. A., will recognize the truth of this statement at once. It is most unfortunate that it should be so, but so it is and it was to put a stop to just that sort of thing that the council was formed. No physician can tell, unaided, whether the manufacturer is telling the truth about his stuff or not; he has not the time nor the knowledge to make chemical examinations himself, nor the money to have some chemist make them. Therefore observe the foolishness of this "straw man" and be not deceived.

SAN FRANCISCO PHYSICIANS.

In a recent issue of the *Bulletin* of the American Pharmaceutical Association (an organization of scientific men—mostly—for scientific purposes, and not to be confounded with the National Association of Retail Druggists which exists, apparently, for the purpose of aiding the proprietary association and its members in promoting nostrums and "patent medicines"), is an item which demands some consideration. We quote:

> "The charge is made that no one can establish a prescription business in that city (San Francisco) without paying commission to the doctors, that these ghouls even collect commission from nurses and morticians."

The officers of the A. Ph. A. are men of the highest standing in the country, including such men as W. M. Searby, of San Francisco; Oscar Oldberg, of Chicago; Henry H. Rusby, of New York, and others of equal standing. Now, Messrs. Searby, Rusby, et al., do you not think it quite fitting that you apologize to the medical profession, not alone of San Francisco but of the entire country, for referring to them as "ghouls"? Whatever their faults, they are members of a learned profession which gives more of its time, its brains and its work to charitably succoring the sick poor than do all the other professions combined. Are they "ghouls"? That, too frequently, alas! a commission is paid to certain physicians on their prescriptions, is true. But who started the game? Who taught the physicians to take it? Who competed for the prescription business of all the physicians who could be so bought? Who had drummers, local, city agents whose business it was to go to physicians and offer them commissions and endeavor to persuade them to take the filthy money? Who bid, the one against another, each offering somewhat more of this dirty money, to secure certain physicians' business? Messrs. Searby, Rusby, et al., it was *the pharmacists who started the game* and who have seduced and are still trying to seduce physicians into taking this rotten gain. But not all are bad; there are many men in this city of San Francisco who have been approached by representatives of *your* calling over and over again to do this very thing, but in whom there is too much honor and too much honesty to listen to the unhallowed proposition made to them first by one and then by another pharmacist. And yet we are "ghouls," forsooth! All of us, without exception, are without saving grace! As for the two other charges, referring to nurses and "morticians" (*sic*), they are nothing but lies, except in so far as there may be an occasional rascal who would blackmail anyone, if he got a chance; and you find them in all callings, even in politics we have been told, and doubtless amongst the pure-as-the-driven-snow pharmacists might be found some who have grown fat by encouraging the cocain habit. Really, gentlemen, officers of the American Pharmaceutical Association, don't you think you had better offer some apology to the medical profession, or do you, after due consideration, now that the matter has been called to your attention, still consider yourselves justified in designating physicians as "ghouls"?

SOCIETY REPORTS.

Some few county society secretaries are sending to the JOURNAL very full and good reports of their meetings, the papers read and the discussions thereon; but a good many are not. What is the matter? It has been found by experience that these reports are of great interest, not alone to the members of the particular society, but to many general readers and to other societies. New ideas or experiences, new thoughts, new points of view, new suggestions, reports of interesting cases are constantly being made in the county society meetings and these things are things of value; they should not be buried in one county society. Will not the secretaries of county societies give this matter their attention and take sufficient time, immediately after each meeting, to send a transcript of the interesting points brought out to the JOURNAL for publication? It will not take a great deal of time or work, and please, Mr. Secretary, remember that that is one of the things you were elected for.

ALKALOIDAL ABBOTT.

Judging from the number of circular letters which have been sent to your editor, Abbott must be spending a good deal of the alkaloidal money in circularizing the physicians in California and telling them what a rascal "this Jones"* is and how he must endeavor to curry favor and "bolster up his official position;" that is certainly a "new one" on the editor! And such strong language! "Thoroughly absurd," "Absolutely, unutterably false," "mental vaporings," "unfair inferences of a hypercritical mind," "libelous," "defamatory," "editorial fulminations of this man," etc. He takes a whack at the editor of the *Journal* A. M. A., merely incidentally, and then offers this description of the unspeakable Jones:

> "That Jones stands ready at all times thus vindictively to second any shadow of inspiration that he can draw from this (*Journal* A. M. A.) or any other source, to make assaults upon our interests, or those of anyone else of independent thought and character, and regardless of truth and probity, is evident to all who know him."

You have all seen "this man Jones" wandering about the state for the past six years, organizing county medical societies, etc., and if, indeed, it *"is evident to all who know him"* that he is the sort of blackguard so choicely pictured by dear, good Dr. W. C. Abbott, why the quicker the society can fire him the better it would seem—for Dr. Abbott and his ilk.

SMALLPOX IN SCHOOLS.

Again do we call attention to the up-wave of smallpox pretty generally over the United States and notably in California. Doubtless the focus of many a small, localized epidemic would be found, could it always be traced, in a case of "chicken pox" in some child who has not been quarantined and has been allowed to return to school before the danger period has passed. In some instances it is quite possible to demonstrate this fact and in many more it is clearly indicated. Health boards and health officers should be on the alert and should be particularly suspicious of these light cases, or cases of apparent chicken pox in children who are attending school. It seems almost foolish to emphasize the tremendous importance of rigidly enforcing the compulsory vaccination law, and yet in some sections of the state it is being openly and notoriously violated, to our shame be it said. Just as surely as we are neglectful of this matter, we will have trouble from this disease; and to have an epidemic of smallpox is, in this day and generation, a disgrace to a community, for it points out an ignorance that should not exist. Watch the schools and inspect the school children most carefully; above all, enforce the vaccination law.

* The editor apologizes for the personal tone of this editorial, but he could not help it.

ADDRESS OF THE PRESIDENT.

Medical Society of the State of California.

By GEORGE H. EVANS, M. D., San Francisco.

I shall ask the indulgence of the Society on this occasion for departing from the usual custom pertaining to the Presidential Address, and shall present briefly a subject which, though of vital importance, in these days, when the activities of the profession are divided between Academic Medicine and Commercialism, has been relegated to comparative obscurity. The general practician, equally appalled by the intricacies of the former, as he is disgusted by the blatant methods of the latter, has suffered himself to lose sight of the rich heritage which it is his privilege to enjoy as a member of a profession based on the highest altruistic ideals, and has to a large extent overlooked his duties to his community in matters pertaining to Public Health, which he has sworn to safeguard.

The truth of this has forcibly obtruded itself in the light of recent events in San Francisco, in relation to the presence of Plague in that city, and the efforts being made for its eradication.

I think it would be appropriate to state at this time the means by which the public of San Francisco has been stirred in a matter of Public Health, in a way that it never was aroused before; for it illustrates the power of the profession in a community, a power which has lain dormant, and yet which when exercised can certainly make its influence felt. On December 28th, 1907, the Council of this Society met to consider the question of Plague in San Francisco, and the measures being used to control it. Plague had been present since May, and while there had been a temporary decrease in the number of human cases, owing to the fact that the medium of contact between the rat and man was inactive, the incidence of the disease in the rat was constantly increasing month by month. The peculiar danger attendant on these facts was that the proportion of the population that was not in ignorance of them was in an attitude of criminal complacency. The press, the great educational medium of a community, was silent, or abusively vociferent in its denial. A Republican government was spending over $30,000 a month in fighting a disease that the leading Republican paper of the city said did not exist. The local Health Board, carrying the incubus of a heritage of inefficiency from its predecessor, did not enjoy the confidence of any considerable proportion of the populace. The Marine Hospital authorities were therefore thwarted in every effort looking toward permanent eradication.

These were the conditions that confronted your Council when it met to devise means to educate the public as to the grave dilemma that confronted

(Continued on Page 154.)

DR. GEORGE H. EVANS.
(President, 1907-08.)

Dr. Evans was born in Paris, Ontario, Canada, in 1868, and comes of old Irish and English stock. His early education was received in the public schools of Brantford, Canada, where later he received his academic education in the Collegiate Institute.

Later in life his parents moved to Detroit, Michigan, where he entered the Detroit College of Medicine, from which institution he was graduated in 1891, shortly after which time he came to California, where he has remained and has practised his profession in San Francisco. In 1899 he became secretary of the San Francisco County Medical Society, which office he filled until 1903, when he became president of the society. From 1900 to 1903 he was secretary of the Medical Society of the State of California, and during most of that time he was also secretary of the California Academy of Medicine. In 1907, at the Del Monte meeting of the Medical Society of the State of California, Dr. Evans was unanimously elected president, succeeding Dr. R. F. Rooney, the previous occupant of the presidential chair.

For some years Dr. Evans has held membership in the San Francisco County Medical Society, the Medical Society of the State of California, the American Therapeutic Association, the American Association for the Study and Prevention of Tuberculosis and the International Antituberculosis Association. He was a delegate in 1905 to the International Congress on Tuberculosis, which met in Paris that year. In 1906 he organized and was made the medical chief of the tuberculosis department of the City and County Hospital, San Francisco, which position he still holds. Until elected to the presidency of the state society, he was an active member of the tuberculosis committee of the society. At the present time he is also visiting physician to St. Luke's Hospital, San Francisco, and associate professor of medicine in the San Francisco Polyclinic. His contributions to medical literature have been considerable and of importance.

the city and State, for it is the duty of the physician to educate the laity in matters pertaining to Public Health.

The Council appointed a Committee to take up this work. Arrangements were made for a meeting which was held January 18th. Six hundred invitations were sent out to those representative of mercantile and civic interests, and an attendance of about sixty, a large proportion of whom were doctors, eloquently attested the all-absorbing interest this serious dilemma presented to the citizens. The yeast that was subsequently to leaven the population was present at that meeting, however. A resolution bringing into existence a Committee, with the Mayor as chairman, was passed. The Committee was for the purpose of appointing a larger Committee of twenty-five, to aggressively take up the work of publicity and sanitation. The Mayor's Committee met; thirteen laymen and twelve physicians were appointed and organized as the Citizens' Health Committee. The record of the work done by that Committee is familiar to you all. Men, prominent in the business life of the city, have given their entire time to the work in hand. The Executive Committee, which immediately directs the campaign, is in daily session. Every branch of industry has been taught the danger to the city; every civic department; every educational institution; every organization that wields influence; every adult human being in San Francisco has been told that the city is confronted by the danger of an epidemic of Plague, and with very few exceptions all these have arisen to the occasion, and are actively engaged in the work of improving sanitation.

When we contemplate the spectacle of the business interests and the press engaged in, not only acknowledging, but disseminating the truth regarding the condition, and recall the shameful policy of denial that obtained previously, and which constituted the greatest menace to our industrial and physical security, the conviction of the power of the profession as an educational influence is brought forward with a directness which is encouraging.

What the organized profession can do with public opinion, the individual physician can and should do in his more limited sphere with those with whom he comes in contact. That this duty of the physician is not generally observed is apparent to the most casual observation; and the responsibility for this non-observance must first of all be laid at the doors of our medical schools, for hygiene is not given the prominence in the curriculum that it deserves. Until our schools more fully recognize the necessity for separate chairs for hygiene, it can not be expected that our graduates can start on their career with a true realization of the importance of this subject. The struggle for existence by the medical profession is not conducive to the development of altruistic ideas, and, unless these duties are very thoroughly instilled into the undergraduate, he will of necessity enter upon the duties of his career, indifferent to his responsibilities as a guardian of Public Health. And so indifferent does he become that he is too often the chief offender. The popular but unreasoning fear of "chills" and "drafts" is too often responsible for the stifling atmosphere surrounding the pneumonia patient, whose chief source of oxygen is supplied him from a reservoir containing the "canned" variety—an atmosphere as pestiferous as that frequently found in the attendant's consulting room, so devoid of all suspicion of ventilation. The dread of "night air" and "fog" has caused countless sacrifices of tuberculosus victims on the altar of Moloch, while an indifferent profession has suffered the rapacious land-holder to extract his "pound of flesh" from the inhabitants of his insanitary tenements.

Is this somewhat graphic picture overdrawn? San Francisco has the highest mortality rate from tuberculosis of the ten largest cities in the United States. Tuberculosis is a disease of overcrowding in ill-ventilated places of abode. The reforms brought about in New York City through the achievements of the Tenement House Commission have done more to reduce the mortality rate from tuberculosis in that city, than any other one factor; and yet the effort to enact reform tenement house legislation in San Francisco last year was participated in by a scant half-dozen of the physicians of that city, and were it not for the earnest activity of a clergyman, supported by a few public-spirited men and women, this very important ordinance would have been hopelessly lost in committee.

Education is compulsory for all children in this State between the ages of 6 and 14. In order to properly protect the health of our children they must be housed in sanitary school buildings. Boards of Education must be taught the necessity of hygiene in the schoolroom and the school yard. Boards of Health must enforce the sanitary regulations which exist upon the statute books. An investigation of some of the schools of San Francisco reveals a condition which would appear incredible in a Christian community. Overcrowding, ill ventilation and filth in schoolrooms, insanitary condition of toilets and school yards, absence of adequate protection against fire, utter disregard of the observance of the cubic air requirements, reveal the apathy of the physician, who should lead in matters pertaining to Public Health, but who suffers his own children to be subjected to these conditions which are daily sacrificing the health of the brightest and most promising children. A holocaust in a school in an eastern city, where 170 children are sacrificed, a few hysterical newspaper articles arouse temporarily a lethargic school board to the necessity of adequate protection against fire; a severe epidemic decimating the occupants of a certain school building enforces spasmodic investigation and overhauling of the plumbing equipment; and then our complacent school board settles down to its "routine duties" until again aroused by some new catastrophe. Routine examinations of all school children and school-teachers would reveal the fact that a considerable proportion of them suffer from

physical defects which should prevent their attendance. No examinations of children or teachers are made in San Francisco, and yet, according to Williams, of New York, of 134,000 of the school children examined in that city, 90,000 were in need of medical treatment, and a considerable number of these were a menace to their companions.

What has the physician to do with all this? Is he responsible for the dereliction of duty on the part of school and health boards? I think it must be admitted that he is doubly responsible. He is responsible through his medical society, whose duty, as clearly laid down by our Constitution, is "to enlighten and direct public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public, in the prevention and cure of disease, and in prolonging and adding comfort to life." He is responsible in his individual capacity because he has failed to instruct the parents in the necessity of properly attending to the health of their children.

It has been very encouraging during the past year to observe the activity of the Pure Food Commission of this Society, and I shall not attempt to anticipate the Report of this Commission. The work of such a body, however, can not be carried to a successful termination without the active support of each individual physician. The evils which everywhere exist do not present the interest of the medical man in this important subject in a very creditable light. Recent revelations in Butchertown in San Francisco, show that for forty years a large portion of the meat supply of that city has been prepared in an environment of disease-breeding filth, which cause the Chicago abbatoirs described by Upton Sinclair, to stand forth as ideal sanitary institutions in comparison. The vegetables which supply our tables are carried into the city in the same wagons which cart the fertilizing manure back to the vegetable gardens, despite the fact of the existence of an ordinance which strictly forbids such an outrage. For several years the Milk Commission of the San Francisco County Medical Society has vainly endeavored to create in that city a demand for clean milk. Children are alcoholized and dosed with nostrums for digestive maladies, the result of improper feeding, by a profession that largely suffers itself to be taught modern therapeutics by the patent medicine and food manufacturer. Philanthropists cry out for funds for the support of hospitals for children poisoned by dirty milk from tuberculous herds, while we suffer these bacterial emulsions to be daily fed to our patients, and placed upon our own tables.

Is it not time that the family physician should be brought to a realizing sense of his obligation to the public, and the awful results of his indifference? Are we, the profession of today, to rest unmindful of the duties devolving upon us, or shall we, by a conscientious performance of our daily duty, take our proper place in the community as guardians of Public Health?

REPORT OF THE COUNCIL.

By C. G. KENYON, M. D., Chairman.

Your Council herewith presents the report of the work which has passed through its hands since the last meeting of the Society. Eleven meetings have been held and the attendance has been most gratifying. The unusual conditions following the disaster of 1906 and the resulting sudden adjournment of the Society, forced upon the Council rather peculiar duties. Del Monte was selected by the Council as the place for the last meeting, and the various matters which had come before it up to that time were ratified last April by the House of Delegates.

In order that the work might be the better carried on, the Council authorized the President to increase the Pure Food Commission to five members, and took similar action in regard to the Committee on Arrangements. At the meeting in October the resignation of Dr. F. C. E. Mattison from the Council was accepted, and as no recommendation had been received from the Los Angeles County Association, for filling the vacancy, the Council elected Dr. F. M. Pottenger to fill said vacancy until the time of this meeting.

On December 28th, at the request of the President, a meeting of the Council was held to consider the presence of plague in California and discuss the action of the Council in that connection. It was regularly moved and carried that the President of the State Society, Dr. George H. Evans, be authorized to appoint four other members to act with him as a committee of five to wait upon the business and commercial organizations of San Francisco, and in the name of the Medical Society of the State of California, urge upon them the necessity for a public awakening to the immediate danger of the situation. The President appointed to act with him as such committee, Drs. Sherman, Williamson, Parkinson and Gallway. You are all doubtless aware that the successful work of that committee has brought about a wonderful awakening in San Francisco and a most energetic sanitary campaign.

One of the gravest tasks confronting the Council was the successful carrying through of the work of the Society while at the same time financing its obligations. The statements of financial condition, and from the auditor who experted the accounts, will show you what has been done. You will note that during the year 1907 $2,616.85 was paid out for obligations of previous years (some of this debt going back as far as 1905), that our liabilities were reduced during the same period by the sum of $997.16, to which amount must be added $450.00 paid for paper to be used in 1908, and $200.00 cash fund, making a total cash gain for the year $1,647.16.

The statement of cash April 1st, 1908, shows you that it would be possible for the Society to liquidate all its indebtedness at once, if such action were required or necessary. But the necessity for carefully husbanding our resources during 1907 has made it impossible to prosecute the work of organization as it should have been done. With the coming of

1908 and a somewhat easier financial condition, it was the intention, as expressed at a previous meeting of the Council, to resume the active organization work which had previously been done by the Secretary. This, however, was greatly interfered with by the operations of the Plague Committee and the resulting Citizens' Health Committee, which required almost the entire time of several officers of the Society, notably the President and the Secretary, who had planned to undertake the organization work.

Your Council earnestly recommends that, as the holder of our note for $2,000.00, Mr. W. C. Tait, is perfectly willing to allow the note to run longer, only a portion of it be taken up this year and the funds thus made available be judiciously employed in continuing the interrupted work of organization. Your Council believes that the importance of awaking the interest of the general profession in the work which should be done by county medical societies, can not be overestimated; that the activity of physicians in their several counties, to the end that the County Medical Society shall become of the greatest educational value to the public, safeguarding the public in all sanitary matters and guiding it in all questions of hygiene, should in every way be encouraged. In some sections are county societies which have actively taken up the work of enlightening the public on health matters, with the most gratifying results; such societies must soon be, where they are not already, recognized by their respective communities as representing to the fullest degree an educated scientific profession, and as such receive, without reserve, the respect of the public to which our profession is entitled but which it does not always receive. We therefore recommend that a sum not to exceed $1,000.00 be, in the discretion of the Council, applied in liquidation of the note for $2,000.00 which falls due this June, and that the balance be continued.

We believe that it would be highly advantageous to call together the presidents and secretaries of county medical societies and the members of the Council to discuss ways and means of organization and other matters of interest to the life and activity of the County Medical Society, on which is built the whole structure of medical organization. What can be done for our profession and for the public good has been clearly hinted at in the restoration of the $5.00 examination fee, and more recently in stimulating public interest in the subject of plague in San Francisco. The Council feels that at this meeting there should be a full and frank discussion by the delegates present, of the conditions existing in the various parts of the state, which would undoubtedly result in many valuable suggestions for continuing organization work.

The work of the society, and its expenses, have slowly but surely increased, whereas our revenue, owing to the action of the House of Delegates last year in deciding that certain classes of remedies might not be advertised in the JOURNAL, has somewhat declined. We therefore recommend that the assessment for the year 1909 be fixed at $3.00 per member, as has been the case for the last two years. The Council believes that the benefits which the members receive through the office and the publications of the society are worth at least $3.00.

Respectfully submitted.

C. G. KENYON,
Chairman of Council.

REPORT OF THE SECRETARY.

To the President and Members of the House of Delegates:

Gentlemen: Herewith I have the honor to hand you the report of the Secretary and Editor of your publications.

During the year 1907 one of the principal occupations of the secretary was an endeavor to save money in order that the obligations of previous years and the losses from the disaster of 1906, might be made up. This matter will be presented to you by the Council and will sufficiently reveal the financial condition of the Society.

Publications.—The Register has been a source of expense to the Society for some years. For this reason the Council authorized the Secretary to enter into an agreement with Mr. H. Kaplan which released the Society from all financial obligations and secured a sufficient number of copies for all members. The Society supplies the information and copyrights the book; Mr. Kaplan publishes it and furnishes a copy to each member. In this way a saving of from $200.00 to $500.00 is secured. It has been extremely difficult to secure accurate information for the *Register* and the last edition contained a larger number of errors than usual. The work has gone steadily forward, however, and we believe that the next edition will be more accurate.

The JOURNAL, in spite of the panic and some other adverse conditions, did well from a business point of view during 1907, as you may see from the financial statement in your hands. During the present year the gross amount which we confidently expected to receive from advertising will be less than in previous years, largely due to two causes. The ruling that no preparations which had not been approved by the Council on Pharmacy and Chemistry of the A. M. A. should be advertised in our JOURNAL after January 1, 1908, or the expiration of existing contracts, caused us to drop several pages of advertising, which it was highly desirable that we should drop. The second cause acting upon us adversely was the panic which occurred last fall. That is the time of year when advertisers, as a rule, make up their lists of journals and appropriate a certain amount of money for the following year, and as many firms were more or less alarmed and cut down expenses, a certain line of probable advertisers were not secured. We have dispensed, however, with the services of an advertising manager, thus securing the full benefit of all advertisements and as a result the net amount which is in sight for JOURNAL advertising during the year 1908 is almost as much as the net amount last year when a

considerable commission was paid on all of our business. We have secured an advertising agent in New York and another in Chicago, both of whom are acting for some fifteen state association journals, and in due course we may expect to receive some new business from these sources; in fact, about two pages of advertising have been thus secured.

Membership.—The card file was not re-established during the past year, owing to shortness of funds, but work will probably be begun upon it this year. The list of members as of April 1st, which has been handed you, is somewhat deceptive in that it shows a loss of some 160 members from the figures last year. In San Francisco alone, something over 100 members were reported last year though their whereabouts could not be given and they had not paid up their dues to that county society. This year these have been dropped. Work is under way, however, to thoroughly go over the non-members of San Francisco County and it is believed that one or two hundred members will be added in the next few months. Los Angeles County also shows a loss in membership, but indications are that many of those suspended will be reinstated and that the present loss will be more than made up during the year.

Conditions in the smaller county societies show an interesting contrast. A number of them have increased very markedly in solidity and activity, during the past year, and have improved in tone and in work, if not in numbers, in a way that is most encouraging. On the other hand there are a number which have almost lapsed into somnolent death. If we investigate closely, we find that all those societies which have been busy, have improved and that those which have not improved are those in which no attempt is made to do any portion of the work which should be done by our profession, as units and as an organization, in the matter of scientific improvement or education of the public. I believe that semi-public meetings, to be addressed by one or more members of the Council, will stimulate interest in these county societies; and if the recommendations of your Council are accepted, it will be quite possible to perform this work in a satisfactory manner during the present year. In one or two counties where the secretary has been able to hold such meetings, the result has been highly beneficial and lasting.

At the last meeting of the A. M. A. all the secretaries of State associations in attendance were called together to meet with the officers of the Association and a general discussion of organization matters followed. This meeting was so satisfactory that it was decided to effect permanent organization and to hold a meeting of secretaries each year. The organization has been formed and the secretary of each State medical association has been requested to place the matter before his association or society. It is recommended by this association of state secretaries that, in order to keep the State organizations in closer touch with the American Medical Association, each State organization, in so far as possible, send its secretary to the meetings of the A. M. A. as a delegate, and pay all, or at least a portion, of his expenses. A number of state associations have taken favorable action upon this request. Certainly, so far as your secretary is concerned, nothing connected with the last meeting of the A. M. A. was of more interest or value to him than the meeting of state secretaries just referred to.

There are many separate committees or commissions, some of this society and others having other origins, which have to do, more or less, with the education of the public on sanitary lines and the enactment of public health legislation. In some way all of these various bodies, now having a very miscellaneous aspect, should be brought into line and into touch with each other in order that time, work and energy may be economized and greater usefulness result. Such action will, I believe, have a decidedly beneficial effect upon county societies, for the more work a society has to do, the more are its members brought together and the better is the tone of the society. Furthermore, next year we are to be blessed (?) with another session of the Legislature and no time should be lost by county societies in instructing possible candidates and future legislators upon the public health needs of our State. In this work the various and heterogeneous committees and commissions, if brought closer together, may be of the greatest usefulness.

Respectfully submitted,

PHILIP MILLS JONES,
Secretary and Editor.

San Francisco, April 1st, 1908.

REPORT OF THE PURE FOOD COMMISSION.

By F. C. E. MATTISON, M. D., Chairman.

The Pure Food Commission was a special Committee of our Society authorized by the House of Delegates and Council at the 1907 meeting at Del Monte, and consists of five members appointed by the President of the Society.

Our President, Dr. Evans, appointed on the first Commission, the following members: Dr. F. C. E. Mattison (Chairman) Pasadena, Dr. Langley Porter, San Francisco; Dr. W. F. Snow, Stanford; Dr. Stanley P. Black, Pasadena, and Dr. George H. Kress, Los Angeles.

At its meeting of organization Dr. Snow was present, and at that time Dr. Kress was elected Secretary and the general work to be attempted mapped out.

The plan of organization deemed best, assumed the following form:—The Committee of five, or the Pure Food Commission of the State Medical Society, was to do the work of a central executive committee, supervise the general organization of local pure food committees throughout the state, and act as a clearing house and aid in all efforts to promote the work for which the commission had been formed.

The commission decided to try and have pure food committees appointed from every county medical association in California, and to that end letters

were written to these associations and the columns of the STATE JOURNAL freely used in exploiting the aims of the central committee. We are glad to be able to state that the following county associations responded to this appeal and formed local committees:

MEMBERS.

Alameda county.—No committee appointed.

Butte county.—No committee appointed.

Contra Costa county.—No committee appointed.

Fresno county.—Doctors G. H. Aiken, W. T. Maupin and G. A. Hare.

Humboldt county.—No committee appointed.

Kern county.—No committee appointed.

Kings county.—No committee appointed.

Los Angeles county.—Dr. L. M. Powers, chairman; Dr. G. H. Kress, secretary; Doctors F. C. E. Mattison, Titian Coffey, Stanley Black.

Pasadena Branch of Los Angeles County Medical Association.—Drs. Stehman, E. B. Hoag, Zuill and Dr. Stanley P. Black, Dr. F. C. E. Mattison.

Pomona Branch.—Dr. Joseph K. Swindt.

Long Beach Branch of Los Angeles County Medical Association.—Dr. W. H. Jones, chairman; Doctors A. C. Sellery and E. H. Freeman.

Marin county.—Doctors J. Kuser and H. O. Howitt.

Mendocino county.—No committee appointed.

Merced county.—No committee appointed.

Monterey county.—Drs. E. K. Abbott of Monterey and Drs. J. Parker and T. C. Edwards of Salinas.

Napa county.—No committee appointed.

Orange county.—Dr. Francis M. Bruner, chairman; Dr. C. D. Ball, secretary, and J. L. Beebe.

Placer county.—No committee appointed.

Sacramento county.—No committee appointed.

Riverside county.—Dr. W. W. Roblee, chairman; Dr. J. L. Baird, and Dr. W. B. Sawyer.

San Benito county.—No committee appointed.

San Bernardino county.—No committee appointed.

San Diego county.—Dr. J. A. Parks, chairman; Drs. Edw. Grow, H. A. Thompson and F. H. Meade.

San Francisco county.—Dr. J. Henry Barbat, chairman; Dr. A. B. Spalding, Drs. Paul Castlehun and J. T. Watkins.

San Joaquin county.—No committee appointed.

San Luis Obispo county.—Dr. E. L. Paulding.

San Mateo county.—Drs. H. G. Plymire, South San Francisco; Dr. A. F. Maine, Redwood City, and Dr. Geo. C. Baker, San Mateo.

Santa Barbara county.—Drs. Conrad, Sundberg, Rexwald Brown, Todd and Barry.

Santa Clara county:—Public Health and General Sanitation Committee:—Dr. J. J. Miller, chairman, San Jose; Dr. Wm. Simpson, Dr. Louis Belkman, Garden City Sanitarium; Dr. Ray L. Wilbur, Stanford University; Dr. Clara A. Sylvia, Gilroy; Dr. A. E. Osborn.

Santa Cruz county.—No committee appointed.

Shasta county.—No committee appointed.

Solano county.—Geo. W. Morton, Esq., chairman, Vallejo; R. R. Dempsey, secretary, Vallejo; Jas. B. Cauley, Vallejo; C. E. Turner, Vallejo; F. T. Bond, M. D., Vallejo; Jas. H. Hogan, M. D., Vallejo; Dr. W. G. Markerson, Rio Vista; Dr. S. G. Bransford, Suisun; Dr. P. V. Fry, Rio Vista.

Sonora county.—Doctors Robt. Inneo Bromley, Elisha, Tolman Gould.

Stanislaus county.—Drs. B. F. Surryhne, secretary; F. R. De Lappe and H. C. Watts.

Tehama county.—Drs. A. P. Tartar, H. H. Zimmerman and J. M. West.

Tuolumne county.—No committee appointed.

Ventura county.—No committee appointed.

Yolo county.—Drs. H. D. Lawhead, Woodland; C. H. Fairchild, Winters, and W. E. Bates of Davis.

Yuba-Sutter counties.—Dr. C. W. Stone, Dr. G. W. Stratton of Marysville, and Dr. T. P. Peery of Yuba City.

The total number of county medical societies that appointed committees is 22.

The total number of county societies that have not appointed committees is 18.

The chairmen of the different County Pure Food Committees became members of the advisory council of the central committee.

The central committee also addressed a letter to every health officer in the state, calling attention to the work of the central and county committees and asking the co-operation of these officials. Here, also many letters of promised aid followed. Those heard from were:

Dr. Edward N. Ewer, Oakland; Dr. J. Wallace De Witt, Antioch; Dr. E. W. Weisert, Angels Camp; Dr. J. D. Reed, Covina; Dr. J. J. Peckham, Avalon (refused his assistance); Dr. J. H. Kuser, Marin county; Dr. Mary Ryerson Butin, Madera county, Dr. J. H. Crumpton, Sausalito; Dr. J. T. Clark, Santa Ana; Dr. E. Z. Hennersey, Napa; Dr. Geo. P. Gerichten, Jamesville; Dr. S. H. Rantz, Placerville; Dr. A. J. Kahn, Napa; Dr. W. Harriman Jones, Long Beach; Dr. W. H. Parker, Santa Monica; Dr. W. W. Roblee, Riverside; Dr. O. R. Stafford, Los Angeles; Dr. F. B. Elwood, Alhambra; Dr. Chas. Pratt, Fall Brook; Dr. D. N. Bacon, Ontario; Dr. Herbert Gunn, San Francisco; Dr. B. V. Watson, Boulder Creek; Dr. Fred C. Gerlack, San Jose; Dr. Wm. Simpson, Santa Clara; Dr. C. H. Anderson, Santa Cruz; Dr. A. Evan Hardin, Petaluma; Dr. C. E. Dorrance, Inyo county; Dr. R. B. Davy, Downieville; Dr. A. G. Gilliland, Cottonwood; Dr. A. P. Parker, Tehama.

The organization of the committee as it now stands, consists of:

1. A central committee of five, appointed by the president of the State Medical Society.

2. A pure food committee to represent each county medical association in the state, each such county committee to be made up of:

(a) An executive portion selected from the county medical association of three to ten members,

these members being appointed by the president of the county medical associations.

(b) An advisory portion of the county committee, to be made up of professional and lay men and women who are interested in public health matters and appointed by the local pure food committees.

It will be noted from the above that the plan contemplated a strong and yet flexible organization with a central committee as the head and local and county committees to bring into play the influence of all persons interested in public health work throughout the state.

The members of the state central committee early felt that the work to be accomplished was public health work generally, rather than only work connected with pure foods, and have acted in accordance with that idea. The central committee also learned early in its active work, that it was well to have a number of measures under way at one time, since the time element entered into every one of these problems owing to the difficulty of securing proper legislation, and by having several under consideration at the same time the meetings were more profitable.

The central committee was designedly made to have three of its five members in close geographical proximity, as that method allowed more frequent meetings and consultations. Acting in conjunction with the pure food committee of the Los Angeles County Medical Association, the central committee took up the work of attacking some of the public health problems of Los Angeles county and city.

As the chairman of the Los Angeles committee was Dr. L. M. Powers, the Los Angeles health officer, and as the secretary of the central committee held the same position in the county committee, the work moved forward without hitch of any kind.

Some of the problems considered were pure milk, bakeries, water, restaurants, tenements, smoke, vegetables, and a county health ordinance.

In all, more than thirty regular meetings were held, to say nothing of many informal conferences between the members.

The meetings were held usually at night in the office of the health officer of Los Angeles. Sundays and some work days, not infrequently found the members of the commission, in automobiles, touring the country for miles around in an investigation of dairies in general, or an inspection of the newly started Pasadena Certified Dairy, or in investigating the water supply of the city, or in examining manufacturing and gas plants, so that the members might note for themselves the propositions involved in an abatement of the smoke nuisance, for instance. During the summer months, about all of the dairies in Los Angeles county were inspected; also the water supply of Los Angeles. It may be of interest to consider briefly what has been attempted in these various activities.

The committee was able to be of considerable service to the health officer of Los Angeles in arranging meetings of dairymen and securing their co-operation in an attempt at proper inspection of dairies. The agitation resulted finally in an appointment of seven milk inspectors instead of two, and as a sequence, the milk supply of Los Angeles is much improved. In this connection the milk committee would recommend that our committee on legislation work to have the present State Dairy Board done away with, and the safeguarding of that most important food product given over to the State Board of Health, where it belongs, rather than to be in charge of a group of lay milkmen and politicians.

In Pasadena the committee was able to secure the co-operation of a wealthy citizen who has started a certified dairy. The commission hopes also within the coming year to secure such a certified dairy for Los Angeles. In the exhibit of the commission, plans and photographs, showing what has been accomplished in this direction are shown.

Through the efforts of Dr. Black, health officer of Pasadena, a better milk ordinance has been secured, and probably one of the best ordinances in the state, as it provides for the tuberculin testing of all milch cows supplying milk to Pasadena. A smoke ordinance was also secured for Pasadena.

The smoke nuisance had begun to assume grave proportions in Los Angeles, owing to the indifference of the gas and other large corporations and after a long battle the commission finally saw the ordinance recommended by it and the board of health passed without a dissenting voice by the city council, simply because sentiment had been educated to the point where no councilman dared vote against the measure. While no attempt is made to stringently enforce this ordinance at present, much improvement has already resulted, and as the manufacturers are taught how to run their furnaces, the provisions of the ordinance for violations will be more strictly carried out.

The basement bakery, and meal and flour foodstuffs were another problem attacked, and an ordinance was passed which will greatly eliminate basement bakeries and insure greater cleanliness in the making of these food products.

Here, as in all else, the commission slowly felt its ground, first, by deciding what it wished to work for, and then learning the other phases of the problems by conference with the vested interests most involved; and always the good will of these vested interests were sought.

During the time your commission was making efforts to secure the various ordinances, we secured the co-operation of the engineers of all grades practicing their profession in Los Angeles, to help us frame a smoke ordinance, that would be acceptable to all classes. This necessitated several meetings of all the prominent engineers of all classes, including the chief engineers of the various railways entering Los Angeles, the stationary engineers, and altogether calling in some 50 or 60 of the representative men.

The same plan was followed with the bakers, one conference being with some 50 or 60 of the bakers.

Members of your commission have visited San Diego, Riverside, Redlands, Pomona, Long Beach

and various other points to interest the members of the society in the work, and have always met with their hearty co-operation and assistance. Most of the above named cities and many others have secured good milk and other ordinances.

The members of our commission in the north, Drs. Porter and Snow, have been very active, and Dr. Porter reports that he expects to have a certified milk dairy in San Francisco very shortly.

Other problems investigated, as already stated, were the water question, the vegetable ordinance, pure foods in general under national and state laws, the county health ordinance, etc. In some of these our efforts were successful, in others, time for further education is needed.

It will be seen from what has been said, that the members of the commission have not been idle. Our Stanford member, Dr. Snow, represented our commission at the Jamestown, Va., meeting of the public health officials, and our San Francisco member, Dr. Porter, has been busy working up interest in the problems of that city.

We believe a valuable organization of medical men interested in public health problems has been built up by our commission during the past year, but much is yet to be done, not only in organization, but in solving the many public health problems confronting us.

There will always be public health problems to be solved, and we believe their solution will come about much more rapidly in our state through this commission than without.

As already stated, we believe the name a misnomer, and recommend that this committee be known instead, as the public health commission of our society. We trust also, that the work it is designed to take up will lead you to continue this commission as one of your committees.

F. C. E. Mattison, Chairman.

FOURTH ANNUAL REPORT OF THE TUBERCULOSIS COMMITTEE.

By F. M. POTTENGER, M. D., Chairman.

The work of the tuberculosis committee of the Medical Society of the State of California during the past year, has been more or less advisory in its nature, and while as a committee it has not followed out any set program, yet it has been consulted on many questions and has given its aid whenever and wherever sought, and in this way has done much for the carrying on of the work of the prevention of tuberculosis in California.

We would like to call the attention of the members of the society to the work which has been done in California in the prevention of tuberculosis during the past year, and while the committee does not wish to take to itself undue credit for what has been accomplished, yet we are glad to say that the committee has aided, both collectively and individually, in all of this good work.

There has at last been organized in California a State Association for the Study and Prevention of Tuberculosis; a local organization is also in the process of formation in San Francisco, and the subject of the Prevention of Tuberculosis has been brought before many localities throughout the state during the past year by public lectures, some of which were under the direct auspices of our committee. We wish especially to congratulate the state on the intelligent activity of the Secretary of the State Board of Health; we also wish to recognize the earnest support of the State Superintendent of Public Schools, who has made it possible for the prevention of tuberculosis to be brought before many of the teachers; and, through the distribution of pamphlets in the schools, has made it possible to reach the homes of the entire state. Especial gratification is also felt in the activity which is being shown in this work by the women's clubs, and the hearty co-operation manifested by business men; all of which augurs well for the future of this movement. In no single year has so much real progress been made.

The committee bespeaks the hearty support of the profession for the movement for state organization, which will be pushed during the coming year.

We wish to call special attention to the International Congress on Tuberculosis which meets in Washington, D. C., September 21st to October 12th, 1908. It is hoped that as many as can will attend the Congress. It promises to be the greatest Congress ever held for the discussion of tuberculosis, and a visit will repay any one who can attend.

The membership fee for the congress is $5.00, which includes a copy of the transactions. In order to give an idea of the nature of the congress, it might be mentioned that such men as Koch, Behring, Metschnikoff, Maragliano, Orth, Schroetter, and many other eminent men from abroad are expected to attend and take part in the program.

Geo. L. Cole,
Jno. C. King,
Edward von Adelung,
N. K. Foster,
F. M. Pottenger,
Committee.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION.

By F. DUDLEY TAIT, M. D., Chairman.

The dominant note in medical educational matters in California during the past year is the A. A. M. C. standards of requirements to the strict enforcement of which California owes its foremost position among the states as well as its controversies in the legislature, in the courts, and with medical colleges.

In the now famous Arwin case, involving the same principles as the equally famous but untried case of Dr. Edith Claypole, the Supreme Court, for the the second time, has sustained the association standard. The court held that the legislature could not intelligently fix the standard of requirements, as these were subject to natural change from time

to time; the A. A. M. C., on the other hand, would be ever in touch with advances in medical science, and could the more satisfactorily fix the standards of requirement.

Your committee has investigated the medical schools of this state in conjunction with the council of education of the A. M. A., an organization with ramifications over the entire United States, developing a tremendous force which judiciously wielded must prove a most potent factor in advancing the cause of medical education in this country. With the exception of two institutions, your committee found on all sides an honest endeavor to enforce the legal standard of requirements. While several of our colleges are far in advance of said standard in the matter of college curriculum, and compare favorably with the best of American colleges, your committee noted a regrettable misunderstanding of the matriculation requirements on the part of college deans in general. Hence a long list of irregularities directly traceable to college deans, but for which the innocent student must suffer. Many a California graduate has been denied the privilege of practicing his profession in this state through errors of matriculation. While strict constructionists may contend that the Board of Medical Examiners should concern itself only with applicants for licenses, we believe, nevertheless, the state owes advice and protection to students, and your committee respectfully tenders its services and the use of its voluminous files to the board of examiners and college deans in view of correcting a great injustice.

The California Eclectic College, of Los Angeles, owes its existence to violations of the medical act.

The College of Physicians and Surgeons, of San Francisco, has repeatedly declined to give any information whatsoever to, or be inspected by, the Board of Medical Examiners, the State Medical Society or the San Francisco County Medical Society. In reporting a repetition of illegalities in this college, your committee cannot forbear to note the anomaly of a college dean ignoring an association which he assisted in founding: Dr. Winslow Anderson was the first secretary of the A. A. M. C.

How has the new medical law operated?

Of the three radical innovations characterizing the new law, two were principally designed for the relief of the southern part of the state. First, the absolute control of "pathies," second the prosecution of illegal practitioners by the Board of Medical Examiners.

From 1901 to 1907, the Osteopathic Board issued over 900 certificates to practice osteopathy, a term which no one has been able to define, but which, according to its followers, includes all the branches of the healing art, and, at the present time, no statute forbids them practicising any or all of said branches. Under the present law, all non-medical graduates have failed most miserably at the examinations for licensure. When we remember that the matriculants of a single osteopathic college of this state greatly outnumber those of all the medical schools of the state, the advent of a single composite examining board would seem not untimely. The section of the new law making the board a prosecuting body has operated successfully, although applied, we regret to say, only sporadically. That no financial contributions from county societies will be required for prosecuting purposes, has now been definitely demonstrated, but nothing permanent can be accomplished without the moral co-operation of said societies.

In California, as in other states, the schools exacting the highest entrance qualifications, have the fewest failures at examinations for licensure. Three reasons may be cited for what the casual observer calls the inordinately high percentage of rejections at the California licensing examinations:

First, unlike Eastern states, California receives a large proportion of applications from practitioners of ten or more years' standing, many of whom, looking upon the examinations in the light of a lottery, take a chance, without adequate preparation.

Second, ever since 1903 a small quota of the examiners have strictly avoided the prevailing quiz system, and, in addition to practical tests, have framed questions capable of measuring the applicant's general observation and his capacity to coordinate and apply knowledge rather than testing his memory. Such an examination necessarily eliminates the product of inferior or cramming schools.

Third, the numerous changes in the composition of the board and the frequent rotation of subjects among its members, are not conductive to experience in conducting examinations.

Although we all sympathize with the applicant who would have his examiners demonstrate their fitness prior to taking office, we cannot have too many safeguards thrown around the entrance to medical practice.

Why was the reciprocity clause stricken from the California statute? For at least one excellent reason: Many state boards failed to investigate colleges and credentials as required in California. Hence a grave injustice to California graduates, each of whom was most rigidly investigated in relation to his preliminary education and college curriculum. Reciprocity would admit to this state seventy per cent of the applicants rejected at the California examinations.

Your committee believes that reciprocity may and should come with uniform legalized standards for all practitioners, investigating boards and the strict enforcement of the laws. Under such a plan, humanity will be the gainer.

The work of the Board of Medical Examiners is not so much in conducting examinations, as in enforcing the provisions of the law relating to preliminary educational requirements, the extent, character, duration and regularity of the college course. In our estimation, the work of the board is far reaching. Its interstate relations are invaluable and unlimited. The board sits in judgment on the product of the medical colleges, and in turn may dictate to these colleges a broader and more practi-

cal line of medical education. Untiring energy, executive ability and impartiality are far more needed for the enforcement of the law than for the formulaton of suitable questions and correcting the answers.

California has helped and is being watched by many states. When a year ago the A. M. A. sought a model medical act for the entire United States, Michigan, California and New York were accorded the preference, and the chairman of your committee had the honor of presenting his report last week in Chicago. Far better than individual efforts, the practical correlation of the various militant forces in the state society would prove a most potent factor in popularizing medical laws and thereby helping their execution. We cannot afford to be less energetic: We must not be less consistent. Every self-respecting member of this society should strive unceasingly to lift our colleges out of commercialism, and lift our board of examiners out of politics.

REPORT OF THE PRESIDENT TO THE HOUSE OF DELEGATES.

By GEORGE H. EVANS, M. D.

The reports of the council and secretary of the work of the society during the year, leave very little that could properly come within the limits of a report by the president. It is needless for me to say to this body that the development of the society has for many years engaged my activities to a very great extent, and my term in the presidential chair has brought certain convictions relative to the necessity for organization work along certain lines, which I wish to submit to you, with recommendations.

The year which has past has witnessed a collective deflection from the membership of about seven per cent, and the causes militating to account for such loss should engage our serious attention. In a commonwealth where the number in the profession is steadily augmented year by year, where such a large proportion of the physicians are not enrolled on the membership list of the state society, and where membership is so vital to the very existence of every physician who seriously realizes the part he should fill in the medical body politic, this organization, were it properly fulfilling its functions, would necessarily steadily increase in membership. The problem becomes more acute when we contemplate the fact that in the two largest county societies, where one would naturally look for the evidence of most complete organization, the loss has been great. San Francisco has lost 72 members during the year, and Los Angeles 18. I am not unmindful of the fact that in San Francisco disturbed conditions following the disaster of 1906 have militated to disorganize our ranks to a certain extent; but I believe that the society must take some share of the responsibility, in not making its power felt more in the community. The disaster brought with it problems to be solved in which the organized profession should have led, but in which, I regret to say, it took no part. I refer in particular to matters pertaining to public health. The constitution of component societies provides for the necessary machinery, but the fault lies with the perfunctory way in which committees are chosen, and the perfunctory manner in which they do their work. It affords me great pleasure and satisfaction to acknowledge the activity of the Board of Directors of the San Francisco County Medical Society in making its influence felt last year in the reorganization of the Board of Health of that city, at a time when a crisis seemed at hand. On the other hand, this demonstration of power only emphasizes the ability of the society to be the power in the community it should be, were its activities always properly directed. It is to be regretted that this activity was not displayed in the tenement house legislation, in the plague situation, and in more active support of the work of the local Board of Health.

It is the function of county societies to educate the laity on many of the large problems of state medicine, and to this end public meetings should be frequently held. If we are to be consistent exponents of preventive medicine, then we must instruct the layman on these matters of which he is so ignorant. The necessity of this was recognized by this body last year, and the president was empowered to appoint a committee on publicity, the function of which committee was to prepare material for publication in the lay press. This was a most important committee, and I regret that it has apparently been inactive.

The American Medical Association, recognizing the need of county societies becoming practical post-graduate schools, has prepared a course of instruction, which has been enthusiastically taken up in certain quarters. The county society will never fill the place planned for it in the comprehensive system of organization of the American Medical Association, until it becomes an active post-graduate institution, with an enrollment composed of every respectable physician in the community; and this should be the goal of every component society.

As a means to this end, I would recommend that the council should, during the coming year, actively take up the organization work in the different counties, as was done prior to 1906, and if the funds of the society permit, this house of delegates should empower the council to employ a paid organizer. This plan has been used successfully elsewhere, and it is my conviction that much good work would result from its adoption.

The component societies should be urged to take up the matter of public health legislation with their respective legislators, and with their local health boards. By means of public meetings the laity should be educated in the importance of such proposed legislation, and each society should have a committee on public health and legislation, which should be performing its duties in more than a merely perfunctory manner.

The work of the Pure Food commission, which has been most active during the year, should be put into permanent shape by the house of delegates. To

that end I would recommend that a permanent committee on public health be established, consisting of a central committee of five, with a representative from each county society. This composite body could well carry on the work in a comprehensive way, working in entire harmony and conjunction with the county society committees, but having much larger functions. It should meet not less than once in three months, and should arrange for regular meetings with the State Board of Health.

In conclusion I would call your attention to the great work being accomplished by the Council on Pharmacy of the American Medical Association in its crusade against the nortrum evil. The valuable assistance rendered by certain lay publications emphasizes the fact that the public is being aroused to the dangers of the great American fraud. In this connection it is with no small degree of pleasure and satisfaction that I remind you that this great movement had its inception in the institution of our own State Journal, and its development is largely the result of the indefatigable energy of the secretary of the society.

MINUTES OF THE HOUSE OF DELEGATES AT THE THIRTY-EIGHTH ANNUAL SESSION, APRIL, 1908.

First session, Coronado, April 21, 1908, called to order at 8:30 p. m., by the President, Dr. George H. Evans.

Roll call by the Secretary showed 45 delegates present.

The President's address to the House of Delegates was then read, and on motion of Parkinson, seconded by Osborne and duly carried, it was referred to a reference or business committee to consider all recommendations. The President appointed as such committee Drs. Parkinson, Wakefield and Richardson.

The report of the Secretary was then read and referred to the same committee.

Report of the Council was read and referred to the same committee.

Report of the editor was made verbally, following which the following resolution was introduced by Parkinson and unanimously adopted:

Resolved, That it be the sense of this Society, that the work being done through the Council and by the JOURNAL is in the best interests of medical organization, of the medical profession and of the general public, and that this work should be continued when and where possible with due regard to the condition of the treasury.

Report of the Committee on Scientific Work was presented verbally by the Chairman, Dr. Fischer.

Report of the Committee on Public Policy and Legislation was presented verbally by the Chairman, Dr. Carpenter.

Report of the Committee on Arrangements was presented verbally by the Chairman, Dr. Burnham, and on motion of Fowler, seconded by Parkinson, it was adopted and a vote of thanks extended to the committee.

Report of the Tuberculosis Committee, presented at the first scientific session, was referred to the business committee without discussion, as was also the report of the Pure Food Committee and that of the Committee on Medical Education.

Amendment to the Constitution, Article VI, Section 1, proposed last year and since published twice in the JOURNAL, was then adopted, amending "five members of the Board of Medical Examiners and three Alternates" to read: **Examiners or nominees for appointment as Examiners on the Board of Medical Examiners as may be required by the laws of the State of California governing the practice of medicine.**

Huntington presented two Congressional bills relating to the U. S. P. H. & M. H. S., together with the following resolutions, which, after some discussion by Parkinson, Huntington, Osborne, Regensburger and Jones, were adopted, and it was then moved by Simpson, seconded by Huntington and carried, that the Secretary be instructed to telegraph Dr. N. K. Foster at Washington, D. C., to the effect that the Society had endorsed the bills.

Whereas, There have been introduced into Congress two bills (H. R. 18792, H. R. 18794) of the utmost importance to the public health of the entire United States, and,

Whereas, It is believed that the passage of these measures is essential to the uniform control and eradication of epidemic diseases in the United States,

Therefore Be It Resolved, That the Medical Society of the State of California urges upon the California Senators and members of the House of Representatives the immediate enactment of these laws, and,

Be It Further Resolved, That these resolutions be spread upon the minutes of this meeting and that copies be forwarded to the Secretary of the Treasury, the Surgeon General of the Public Health and Marine-Hospital Service, the members of the California delegation in the Congress, the members of the Senate Committee on Public Health and National Quarantine and the House Committee on Interstate and Foreign Commerce, and the Secretary of the American Medical Association.

Whereas, There have been introduced into Congress two bills (H. R. 18792, H. R. 18794) of the utmost importance to the public health of the entire United States, and,

Whereas, It is believed that the passage of these measures is essential to the uniform control and eradication of epidemic diseases in the United States,

Therefore Be It Resolved, That the Medical Society of the State of California urges upon the California Senators and members of the House of Representatives the immediate enactment of these laws, and,

Be It Further Resolved, That the California delegates to the House of Delegates of the American Medical Association be instructed to present this resolution to that body and to request the House of Delegates of the American Medical Association to pass similar resolutions.

H. R. 18792—A bill to further protect the public health, and imposing additional duties upon the Public Health and Marine-Hospital Service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: That, in addition to the laboratory investigations now authorized by law of infectious diseases, the Surgeon-General of the Public Health and Marine-Hospital Service, with the approval of the Secretary of the Treasury, shall from time to time make special investigations into the prevalence of tuberculosis, typhoid fever, rabies, and other diseases affecting man, the conditions influencing their propagation and spread, and methods necessary for their prevention and suppression. These investigations shall include housing, occupation, and disposal of wastes, as they affect the public health. The investigation of rabies shall include the preparation and use of the virus or other substance made in the Hygienic Laboratory for its prevention in those exposed. He is further authorized, on request of the health authorities of a State, Territory, or the District of Columbia, to detail officers to co-operate with

said authorities in their measures for the protection of the public health.

Sec. 2. That the results of the investigations authorized in section one of this Act shall be published in the discretion of the Secretary of the Treasury, and there shall also be disseminated by means of sanitary bulletins and exhibits practical information concerning the prevention or suppression of tuberculosis, typhoid fever and other diseases pertaining to man, and the Surgeon-General shall prepare and distribute said bulletins. He shall also co-operate with the trustees of the United States Pharmacopoeia and prepare and publish, with the approval of the Secretary of the Treasury, digests embodying the results of investigations for use in revision of said pharmacopoeia.

Sec. 3. That to facilitate co-operation between State and Territorial boards of health or departments of health, including the District of Columbia, and the Public Health and Marine-Hospital Service, there shall be established a school hygiene for which the facilities of the hygienic laboratory shall be available. Regulations for admission to and for the conduct of said school shall be made by the Surgeon-General with the approval of the Secretary of the Treasury. There shall be received in this school, with such limitations as may be deemed necessary, State, County, and municipal health officials, on application by the board of health or health department of any state, territory, or the District of Columbia: Provided, That satisfactory assurance is given with the application and by the health officer himself that the special instruction desired is to be utilized in the performance of official health duties. Officers of the Public Health and Marine-Hospital Service shall be detailed as instructors in such schools, and officers of said service may also be detailed to receive instruction. An official, upon satisfactory completion of the course of study in sanitary science as prescribed in the regulations, shall be entitled to a certificate to that effect.

Sec. 4. That the bureau division of domestic quarantine and the bureau division of foreign and insular quarantine are hereby consolidated into one division, to be known as the division of quarantine, and there is hereby established a bureau division of water supplies and sewerage. Each of these divisions shall be in charge of a commissioned medical officer of the Service detailed and designated for that purpose, who, while thus serving, shall be an assistant surgeon-general, as now provided by law for the medical officers in charge of the remaining divisions of the bureau; and it shall be the duty of the Surgeon-General, under direction of the Secretary of the Treasury, to investigate the pollution of interstate waters as it affects the public health and make report upon the methods necessary to prevent said pollution, with recommendation as to necessary legislation relating thereto. For this and other purposes there shall be appointed by the Secretary of the Treasury, on recommendation of the Surgeon-General, a sanitary engineer competent to solve technical problems connected with the purification of water and sewage, the salary of said engineer to be fixed by the Surgeon-General, with the approval of the Secretary of the Treasury, and not to exceed five thousand dollars per annum. There shall also be appointed in like manner a solicitor of the Public Health and Marine-Hospital Service, who shall be familiar with the public health laws of the National Government, states, and municipalities, to aid in establishing uniform measures for the protection of the public health, and to perform such service of a legal nature as may be required. The salary of the Solicitor shall be fixed by the Surgeon-General, with the approval of the Secretary of the Treasury, and shall not exceed five thousand dollars per annum.

Sec. 5. That in addition to the conferences now authorized by law to be held between the Surgeon General of the Public Health and Marine-Hospital Service and the health authorities of the states, territories, and the District of Columbia, when in the opinion of the Surgeon-General it is in the interest of the public health to call a special conference, to be held in Washington, of said health authorities of not more than five states and one only from each state, the said delegates shall receive a compensation of ten dollars a day, including the days of travel to and from Washington and necessary traveling expenses: Provided, That not more than five such conferences shall be held in any one year and the duration of any such conference in Washington shall not exceed three days. The five members of the advisory board of the hygienic laboratory now entitled by law to receive compensation when called in conference shall hereafter receive a compensation of twenty dollars a day, including the days of travel to and from Washington by the shortest practicable route, together with necessary traveling expenses: Provided, That the said advisory board, in addition to its duties as now defined by law shall, while in conference, consult and advise with the Surgeon-General with respect to scientific matters relating to the public health.

H. R. 18794—A bill to promote the efficiency of the Public Health and Marine Hospital Service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter the pay and allowances, including longevity, of the commissioned medical officers of the Public Health and Marine Hospital Service shall be the same as the pay and allowances, including longevity and exceptng forage, of the commissioned officers of the medical department of the army, as follows: Surgeon-general, that of the surgeon-general of the army; assistant surgeon-generals, that of assistant surgeon-generals of the army; ten medical directors, that of deputy surgeon-generals of the army; surgeons, that of surgeons of the army; passed assistant surgeons, that of assistant surgeons with the rank of captains in the army; assistant surgeons, that of assistant surgeons with the rank of first lieutenant in the army. Vacancies in the grade of medical director shall be filled by promotion after satisfactory examination from the grade of surgeon and in the order of seniority of said grade.

Sec. 2. That when any commissioned medical officer in the Public Health and Marine Hospital Service has reached the age of sixty-four years, he may, upon his own application or in the discretion of the President, be retired, and his place on the active list be filled by promotion, and in the event of permanent disability of the surgeon-general as determined by a board of commissioned medical officers of said service, appointed by the Secretary of the Treasury with the approval of the President, he may be retired and the vacancy in the grade shall be filled by appointment by the President as now provided by law from the corps of commissioned medical officers; Provided, That the pay and allowances, including longevity, of said officers after retirement shall be the same as that allowed by law and regulations to retired medical officers of like grade in the army. Officers so retired may be assigned, in the discretion of the Secretary of the Treasury, to such duties as they may be able and willing to perform, and when thus assigned shall receive the pay and allowances of their grade when on the active list.

Sec. 3. That the officers in charge of the division of zoology, pharmacology and chemistry, in the hygienic laboratory shall be entitled to leaves of absence and waiting orders as now allowed by law and regulations to commissioned officers of the service,

and their pay and allowances of longevity, and commutation shall be the same as those received by professors of the military academy at West Point. The division of pathology and bacteriology shall be in charge of a commissioned medical officer as now provided by regulation.

Levison then introduced the following resolution, which was referred to the business committee:

Whereas, The work of Dr. Blue and the U. S. P. H. & M. H. S. of the Board of Health and the Citizens' Health Committee has been misrepresented and their motives vilified, be it

Resolved, that this Society endorses the necessity of this work and expresses its appreciation of the admirable manner in which it has been done and of the great services thus rendered to our State.

The following, signed by Grosse and Mattison, was then presented and, on motion, duly adopted.

Resolved, that the President appoint a committee of three to work in the interest of the prevention of venereal diseases and the education of the public along those lines.

Wakefield then introduced the following, which was referred to the business committee:

Owing to the importance of the cancer problem, to the enormous fatality resulting from this disease, to its comparative amenability to treatment if recognized sufficiently early, to the fact that the profession at large have frequently delayed diagnosis until metastases have occurred, to the fact that ignorance on the part of the laity has heretofore prevented them from applying reasonably early for professional advice, to the further fact that, if the members of the profession were kept constantly reminded of the importance of early recognition of cancer, and if the laity were to receive some practical education much might be done to improve the present deplorable percentage of fatalities, therefore we recommend the appointment of a committee of three, whose duty it will be to evolve some dignified and practical system of public education in these particular matters and report at the next meeting of the society.

A communication from the A. M. A. relating to branch associations was presented and on motion ordered laid on the table.

Resolutions from San Francisco and Los Angeles County Societies relating to the Board of Examiners were presented, and on motion of Kenyon, seconded by a number of delegates, and unanimously adopted, were laid upon the table.

The minutes of the session were then read and approved as read, after which the house adjourned.

Second Session.

Wednesday, April 22nd, called to order at 8:10 p. m. by the president and a roll call showing a quorum present, the special order of business was called.

Place of meeting.—Del Monte and San Jose were nominated. Pottenger and Hoisholt were appointed tellers and a ballot taken, which resulted in 37 for San Jose, 19 for Del Monte, and 2 scattering. San Jose was announced as the place for the next meeting.

President.—Dr. Wesley W. Beckett, of Los Angeles, was nominated by King, of Los Angeles. There being no other nominations, on motion the secretary was instructed to cast the ballot of the house for Beckett, who was declared duly elected by the chair.

First Vice-President.—Dr. Fred Baker, of San Diego, was nominated. No other nominations; same course as preceding.

Second Vice-President.—Dr. E. G. McConnell, of San Francisco, was nominated and duly elected by the same course.

Secretary.—Philip Mills Jones, of San Francisco, was nominated, and on motion, there being no ther nominations, the president was instructed to cast the ballot of the house, which was done.

Councillors.—Term expires 1911. Drs. E. N. Ewer, A. E. Osborne, A. H. Mays and A. B. Grosse were duly nominated to succeed themselves, and on motion the secretary cast the ballot of the house and they were declared elected.

Term expires 1909.—Dr. F. M. Pottenger was duly nominated to fill the unexpired term, and was similarly elected.

Delegate to the American Medical Association, term expires 1910.—Dr. O. D. Hamlin, of Oakland, was duly nominated and similarly elected.

Alternates to the American Medical Association.—Drs. G. MacGowan, Martin Fischer and Emmet Rixford were nominated and similarly elected.

Committee on Scientific Work.—Drs. Martin Fischer, Harry Sherman, C. Van Zwalenburg and A. W. Hewlett were nominated and similarly elected.

Committee on Public Policy and Legislation.—Drs. F. B. Carpenter, J. H. Parkinson and J. W. James were nominated and similarly elected.

Committee on Arrangements.—Drs. Wm. Simpson, T. C. Edwards and Saxton Pope were nominated and similarly elected.

The business committee then reported; its recommendations were then considered seriatim and adopted as presented. The report was then adopted as a whole.

Public Health.—Your committee believes that the suggestions of the president as to the duties of individual members of the profession and the functions of medical societies in public health matters should be heartily endorsed. It recommends that the matter be brought to the attention of component societies for the purpose of permanent and concerted action.

Organization.—Recommends that the council undertake, at the earliest opportunity, the more thorough organization of the profession throughout the state, using such funds as are available for the purpose in paying for organization work.

Committees on Public Health in County Societies.—Recommends the formation of such committees in county societies to co-operate with a permanent committee on public health of the state society.

Committee on Public Health.—Recommends that a permanent or standing committee of 5 to be known as the committee on public health be elected annually and that the necessary amendment to the by-laws be offered, for this purpose.

Nostrum Evil.—Your committtte is in hearty accord with the policy of the JOURNAL in the matter of the nostrum evil and believes that the position should be maintained under all circumstances.

Plague.—Recommends that the prompt and forceful action of the president and council in wakening the public of San Francisco and, indeed, of the state to a realization of the danger to the city, state and nation of an epidemic of plague, be heartily commended and endorsed. Further, your committee believes that the Society may justly congratulate itself upon the magnitude of the results attained as well as on the fact that it was in a position to render such public service.

Finance.—Your committee in congratulating the Society upon the excellent financial condition recommends that the assessment for the year 1909 be fixed at $3.00 and that the sum of $1,000 be paid on the Society's note and the balance of the note be continued on the present terms.

Meeting of Presidents and Secretaries.—Your committee believes that this whole question may be left to the council without recommendation.

Activity of Members of the Council.—Your committee believes that the co-operation of councillors in their respective districts with a general organization scheme would be most valuable and urges them to make the necessary sacrifices for this purpose.

Association of State Society Secretaries.—In the matter of the communication on this subject and the recommendation that the many expenses of secretaries of State Societies in attendance upon such meetings at the time of the A. M. A. meetings be defrayed from the general fund, your committee recommends that the matter be referred to the council with power to act under existing financial conditions.

Combination of Committees.—In accordance with the recommendation of your secretary, your committee believes in the combination of committees where possible. At the same time it feels that there should always be an independent committee on medical legislation whose special function should be the dealing with measures relating to the profession emanating from any source.

Tuberculosis Committee.—Your committee commends the formation of a state association in California for the study and prevention of tuberculosis as a most valuable aid in preventing the spread of this disease.

Pure Food.—Your committee can not refrain from emphasizing the admirable and exhaustive report of the pure food commission of this Society and in accordance with the suggestion of the chairman, recommends that the title of the committee be changed to that of "public health" as already provided for when dealing with the report of the president. (Vide ante.)

Medical Education. Carelessness of Deans.—Your committee believes that the point raised by the committee on medical education regarding carelessness of deans in the matter of matriculation requirements is a vital one and recommends that the question be referred to the committee on medical education to give effect to it in whatever manner seems most expedient.

Prosecution of Illegal Practitioners.—Your committee feels that this function of the board of examiners is a most valuable feature in the protection of the public and recommends that measures be taken to inform the county societies as to the necessary preliminary steps whenever the same can be undertaken without expenses to such societies.

Permanence of Members.—Your committee agrees with the suggestion in the report relating to permanence in members of the board; at the same time it must be recognized that the Society can only control this to a limited extent unless it be through a more efficient professional organization.

Reciprocity.—Your committee believes that there should be no reciprocity in the matter of license to practice, except upon a basis of mutual equality in standards and requirements.

Educational Requirements.—Your committee feels that this Society should go on record as approving of the work of the board of medical examiners in dealing with educational requirements and standards as apart from mere perfunctory examinations.

College of Physicians and Surgeons.—Your committee notes with regret that this college has seen fit to lay itself open to censure in refusing to afford facilities for obtaining information in the matter of educational requirements and recommends that the question be referred to the council for investigation and to report at the next annual meeting.

H. R. Bill 18792—In adopting the resolution urging the passage of H. R. bill 18792, which among other things, provides for the detailing of officers to cooperate with state and territorial health authorities in measures for the protection of the public health, the establishment of a school of hygiene and the investigation of the pollution of interstate waters, thus virtually creating a department of public health, your committee recommend that the Society place itself on record as favoring a central sanitary authority under federal control capable of assuming the responsibility of interstate and state sanitary conditions when demanded for the general welfare of the people of the United States.

Cancer. (Resolution of Wakefield; vide ante.)—Your committee recommends that the subject be referred to a special committee of three to be appointed by the president, such committee to report at the next annual meeting.

Plague.—Your committee moves the adoption of the following preamble and resolutions:

Whereas, Bubonic plague has existed in San Francisco since August, 1907, and,

Whereas, The exact nature and true character of this disease has been repeatedly demonstrated, clinically, bacteriologically and by post-mortem examination, to be identical with the so-called oriental plague of to-day and of all the centuries from the dawn of history, and,

Whereas, While no case of plague has been recognized since January, 1908, a widespread rat infection still prevails;

Resolved, That this Society, recognizing the gravity of the situation as a state and a national menace, urges the continuance of strenuous measures for plague suppression until all traces of infection have disappeared.

Resolved, That this Society heartily commends the action of the San Francisco board of health and of the citizens' health committee in their recognition of a serious emergency and gratefully acknowledges the most valuable assistance, both scientific and financial, of the federal government through the public health and marine-hospital service.

Resolved, That this Society condemns in the strongest terms the obstruction, abuse and misrepresentation of the federal, state and local sanitary authorities in the execution of their sworn duty, the protection of the public health, and while urging them to renewed efforts, expresses its entire confidence in their professional ability and integrity of purpose.

Resolved, That the vilification and misrepresentation indulged in by certain newspapers is a disgrace to reputable journalism, a menace to public health and safety and an outrage upon the cities of their publication.

Committees on Tuberculosis and Medical Education.—On motion, duly seconded and carried, these committees were ordered continued.

Congress on Tuberculosis.—The president made an announcement concerning the forthcoming congress.

Malpractice Defense.—The following resolution was introduced by Sawyer, seconded by Fowler, and unanimously adopted:

Whereas, The protection of the profession against damage suits is provided for in our constitution through action to be taken by the council, but thus far its active institution has been prevented by reason of inadequate financial efficiency, and

Whereas, Many state societies have been very successful in carrying out such defense by providing a special fund for this purpose, therefore be it

Resolved, That a committee of three be appointed

by the president to investigate thoroughly this matter and be given authority to present a detailed plan of procedure at the next annual meeting.

The following was introduced by Tait, its adoption regularly moved, seconded and carried:

Whereas, The American Medical Association did, at Detroit, June, 1892, unanimously resolve to demand of all medical colleges of the United States the adoption and observation of the standards of requirements of all candidates for the degree of doctor of medicine which should in no manner fall below the minimum standard of the Association of American Medical Colleges, and

Whereas, Every medical college in California has published said requirements in their respective announcements; now therefore, be it

Resolved, That the Medical Society of the State of California recommends that hereafter no professor or other teacher or any graduate of any medical college in this state which shall after May 1, 1908, violate any section of the constitution of the Association of American Medical Colleges shall be allowed to become an officer or member of any county medical society, and that a copy of this resolution shall be sent to each county medical society in this state with a request for consideration.

Gray, of Sonoma county, addressed the house and requested it to consider the advisability of holding the session of 1910 at Santa Rosa.

The president, Dr. Evans, then appointed a committee to wait upon the newly-elected president, Dr. Beckett, and escort him to the chair, where he was properly installed.

On motion, the thanks of the Medical Society of the State of California were extended to the San Diego County Medical Society and to the profession of the county for the excellence of the arrangements and entertainments and their uniform courtesy and activity.

On motion, put by the president-elect, the thanks of the house of delegates were extended to the President and Secretary for their efficiency in conducting the affairs of the house.

The minutes of the second session were then read and approved as read, after which the house adjourned sine die.

PHILIP MILLS JONES,
Secretary.

THOSE REGISTERED AT THE CORONADO MEETING.

Adams, Dr. Paul A., Los Angeles; Austin, Dr. B. E., San Diego; Ainsworth, Dr. F. K., San Francisco; Allen, Dr. Chas. L., Los Angeles; Adams, Dr. Frank L., Oakland; Adams, Dr. Lemual P., Oakland.

Black, Dr. S. P., Pasadena; Baker, Dr. Charlotte J., San Diego; Baker, Dr. Fred, San Diego; Ball, Dr. C. D., Santa Ana; Burke, Dr. Wm. R., Highland; Brown, Dr. Rexwald, Santa Barbara; Beckett, Dr. Wesley W., Los Angeles; Barnes, Dr. H. E. W., Santa Ana; Bullard, Dr. Rose T., Los Angeles; Bullard, Dr. F. D., Los Angeles; Barry, Dr. Wm. T., Santa Barbara; Bruner, Dr. F. M., Santa Ana; Bishop, Dr. T. W., So. Pasadena; Blue, Dr. Rupert, San Francisco; Burnham, Dr. F. R., San Diego; Bull, Dr. C. Geo., Alameda; Barbat, Dr. J. H., San Francisco.

Cox, Dr. W. M., San Luis Obispo; Cole, Dr. Geo. L., Los Angeles; Chipman, Dr. E. A., San Francisco; Crosby, Dr. Daniel, Oakland; Curdts, Dr. C. E., Alameda; Craig, Dr. W. H., Upland; Crandall, Dr. A. H., San Diego; Clark, Dr. V. G., San Diego; Crowley, Dr. D. D., Oakland; Cooper, Dr. C. M., San Francisco; Coffey, Dr. Titian, Los Angeles; Carpenter, Dr. F. B., San Francisco.

Doig, Dr. Robt. S., San Diego; Dunn, Dr. Jas., Oakland.

Ellis, Dr. H. B., Los Angeles; Ewer, Dr. E. N., Oakland; Ellis, Dr. Sula T., Los Angeles; Ellis, Dr. Sam. A., Azusa; Edwards, Dr. T. C., Salinas; Evans, Dr. J. H., Highland; Evans, Dr. Geo. H., San Francisco.

Fowler, Dr. W. S., Bakersfield; Fleming, Dr. E. W., Los Angeles; Freeman, Dr. Wm. P., Needles; Fly, Dr. Robt. J., National City; Forester, Dr. Geo. W., Pomona; Foster, Dr. N. K., Sacramento; Fischer, Dr. Martin H., Livermore; Fulton, Dr. Dudley, Los Angeles.

Gray, Dr. Edward, Eldridge; Goff, Dr. H. N., San Diego; Grosse, Dr. A. B., San Francisco; Gordon, Dr. A. M., Belmont; Garcelon, Dr. Frank, Los Angeles; Gillihan, Dr. Allen F., Berkeley.

Hare, Dr. G. A., Fresno; Hunkin, Dr. S. J., San Francisco; Hogan, Dr. Jas., Vallejo; Hamlin, Dr. O. D., Oakland; Hoisholt, Dr. A. W., Stockton; Howard, Dr. Edward, La Jolla; Halliday, Dr. W. S., Monmouth, Ills.; Huntington, Dr. T. W., San Francisco; Hastings, Dr. Hill, Los Angeles.

Jackson, Dr. J. A., Pasadena; Jones, Dr. J. Taylor, Grass Valley; Jaffa, Dr. M. E., Berkeley; Jones, Dr. A. Holden, San Diego; Jones, Dr. Philip M., San Francisco.

Kneedler, Dr. Wm. L., Coronado; Kelley, Dr. E. E., San Francisco; King, Dr. Jas. M., Los Angeles; King, Dr. Chas. Lee, Pasadena; Kress, Dr. Geo. H., Los Angeles; Kiger, Dr. W. H., Los Angeles; Kendall, Dr. Oscar J., San Diego; Kenyon, Dr. C. G., San Francisco; Kelley, Dr. A. S., Oakland.

Lobingier, Dr. A. S., Los Angeles; Livingston, Dr. W. R., Ventura; Lissner, Dr. H. W., Los Angeles; Liverman, Dr. J. R., San Bernardino; Lockwood, Dr. Chas. D., Pasadena; Levison, Dr. C. G., San Francisco; Lum, Dr. Wm. T., Alameda: Leisenring, Dr. P. S., San Diego; Leonard, Dr. E. L. Los Angeles.

MacGowan, Dr. Granville, Los Angeles; McCleave, Dr. T. C., Berkeley; Morse, Dr. F. W., Oakland; Morton, Dr. A. W., San Francisco; Magee, Dr. Thos., San Diego; McConnell, Dr. E. G., San Francisco; McArthur, Dr. W. S., Los Angeles; McArthur, Dr. P. R., Los Angeles; Miller, Dr. Frank W., Los Angeles; Moore, Dr. Ross, Los Angeles; Martyn, Dr. Geo., Los Angeles; Molony, Dr. Wm. R., Los Angeles; McKay, Dr. W. W., U. S. Quarantine; Mead, Dr. L. D., Byron Hot Springs; MacKay, Dr. Emma S., Berkeley; Moffitt, Dr. Herbert C., San Francisco; Mattison, Dr. F. C. E., Pasadena; McBride, Dr. J. H., Los Angeles.

Newton, Dr. John C., San Francisco; Nusbaumer, Dr. Pauline S., Oakland.

O'Neil, Dr. Arthur A., San Francisco; Oatman, Dr. H. C., San Diego; Oldham, Dr. J. Y., Los Angeles; Osborne, Dr. A. E., Santa Clara.

Parker, Dr. Ida B., Orange; Phillips, Dr. L. E., Paso Robles; Pope, Dr. Saxton T., Watsonville; Pischel, Dr. Kaspar, San Francisco; Power, Dr. H. D., San Francisco; Phillips, Dr. W. A., Santa Cruz; Pierce, Dr. A. T., Oakland; Parkinson, Dr. Jas. H., Sacramento; Pahl, Dr. P. C., Los Angeles; Parks, Dr. J. A., San Diego; Pierce, Dr. A. W.; Los Angeles; Pottenger, Dr. F. M., Monrovia· Peterkin, Dr. Geo. S., Seattle, Wash.

Rogers, Dr. F. S., Long Beach; Rogers, Dr. A. C., Los Angeles; Rand, Dr. H. P., St. Helena; Robert-

son, Dr. John W., Livermore; Roberts, Dr. W. H., Pasadena; Richardson, Dr. W. W., Los Angeles; Rowell, Dr. Henrietta, Berkeley; Regensburger, Dr. Martin, San Francisco; Rucker, Dr. W. C., U. S. R. H. and M. H. S.; Reinhardt, Dr. G. F., Berkeley; Rooney, Dr. R. F., Auburn; Rowell, Dr. H., Berkeley; Reinle, Dr. Geo. G., Oakland.

Sawyer, Dr. W. B., Riverside; Simpson, Dr. J. A., San Francisco; Soiland, Dr. Albert, Los Angeles; Stratton, Dr. R. T., Oakland; Simmons, Dr. S. E., Sacramento; Southard, Dr. W. Y., San Francisco; Stephens, Dr. B., San Francisco; Schmoll, Dr. E., San Francisco; Shoey, Dr. Sarah, Oakland; Smart, Dr. W. W., San Diego; Sewall, Dr. Edward C., San Francisco; Stillman, Dr. Stanley, San Francisco; Swan, Dr. Benj. R., San Francisco; Spencer, Dr. John C., San Francisco; Simpson, Dr. Wm., San Jose; Stookey, Dr. L. B., Los Angeles; Smith, Dr. Q. C., San Diego; Sweet, Dr. E. A., San Diego.

Taltawall, Dr. Wm. A., Redlands; Thompson, Dr. G. S., Gridley; Thomas, Dr. Hayward, Alameda; Tait, Dr. F. Dudley, San Francisco; Trew, Dr. Neil C., Los Angeles; Thayer, Dr. O. C., San Diego; Toland, Dr. C. G., Pomona; Tebble, Dr. Fria H., Weed; Teas, Dr. C. J., Kennett.

Whitelock, Dr. Thos. S., San Diego; Welty, Dr. Cullen F., San Francisco; Woolsey, Dr. P. C., Berkeley; Winstrip, Dr. W. A., San Diego; Welsh, Dr. Prudence M., Long Beach; Walker, Dr. Horatio, Los Angeles; Wallace, Dr. T., Shasta Co.; Wills, Dr. LeMoyne, Los Angeles; Wakefield, Dr. W. F. B., San Francisco.

Vonder-Lieth, Dr. H., San Francisco; Von Zwalenburg, Dr. C., Riverside.

DELEGATES PRESENT.

Alameda—O. D. Hamlin, H. N. Rowell, J. L. Milton, Daniel Crosby, G. F. Reinle, H. G. Thomas.

Fresno—G. H. Hare.

Kern—W. S. Fowler.

Los Angeles—W. H. Kiger, Jos. M. King, F. C. E. Mattison, Hill Hastings, F. Garcelon, G. L. Cole, W. W. Richardson, Albert Soiland, W. H. Molony, G. MacGowan, J. Y. Oldham, S. P. Black, A. W. Pierce, F. Miller, C. G. Toland.

Monterey—T. C. Edwards.

Orange—Chas. D. Ball.

Placer—R. F. Rooney.

Riverside—W. B. Sawyer.

Sacramento—S. E. Simmons, A. M. Henderson.

San Bernardino—W. P. Burk.

San Diego—T. L. Magee, F. R. Burnham.

San Francisco—J. H. Barbat, A. W. Morton, H. C. Moffit, W. F. B. Wakefield, Dudley Tait, F. B. Carpenter, S. J. Hunkin, T. W. Huntington, H. D. A. Power, C. G. Levison, C. M. Cooper, A. A. O'Neill, E. G. McConnell, E. Schmoll, K. Pischel, M. Regensburger, E. Chipman, C. F. Welty, J. C. Spencer.

San Joaquin—A. W. Hoisholt.

San Luis Obispo—H. M. Cox.

San Mateo—A. M. Gardner.

Santa Barbara—Wm. T. Barry.

Santa Clara—Wm. Simpson.

Santa Cruz—Saxton Pope.

Shasta—C. J. Teass.

Solano—J. J. Hogan.

Sonoma—Edward Gray.

Ventura—W. R. Livingston.

THE WEBER MURDERS. WAS ADOLPH WEBER INSANE?*

By ROBERT F. ROONEY, M. D., Auburn.

On May 26th, 1904, the Placer County Bank was robbed during business hours by a lone robber. The act was spoken of at the time as either the work of an insane man, or that of an old and hardened criminal, utterly regardless of results. Conditions favored the robber, as no patron of the bank happened to enter whilst he was there, a thing which might not happen again for months. The cashier was absent for a few moments, the manager was in his private room, and but one man was behind the counter: a fact which the robber had no means of ascertaining previously. The robber entered and approached the cashier's window and presented a paper, demanding all the coin in the institution, backing up the demand with a leveled revolver. The clerk pretended not to understand the paper, trying to gain time, until some one entered. The bandit got impatient and sprang through the cashier's window (an act that could only be accomplished by a slim, active man), swept about $6500 in gold into a sack which he had provided for the purpose, sprang back through the window and escaped from the building. He was seen by many people when he came out, but he ran rapidly down the street for half a block and seized a horse and light cart that happened to stand by the curbstone unattended, and made his escape out of town, followed by a few ineffective shots. The robber's only disguise was a clumsily constructed set of false whiskers, a slouch hat and common cotton overalls and jumper. These articles and a trifling .22 calibre revolver were found concealed in the brush near where the robber jumped out of the cart and made his escape into the thick chapparal, about half a mile outside of the city. No clew was obtained for months to the individuality of the robber but just previous to the murders whispers were circulated that Adolph Weber was suspected. These were regarded with incredulity, as it seemed impossible that a youth eighteen years old could be guilty of such a daring crime. The whole affair smacked of melodrama. The murders in the following October accentuated the previous suspicions, and minute search was made on the Weber premises, and finally $5500 in gold was unearthed in the cowyard. This money was claimed by the bank, and no opposition was offered by Adolph, as sole heir to the estate.

On the 10th of the following October, between the hours of six and seven p. m., occurred the tragic murders of the Weber family, with the exception of the son Adolph, who then in his nineteenth year. This crime was so shocking in its cold-blooded barbarity that it excited the horror of the entire country, and even all English speaking nations. Now that it has almost passed from the minds of the public, and the murderer has suffered the extreme penalty for his deeds, I consider it incumbent upon myself to review the crime and

* Read at 38th Annual Meeting of State Society, Coronado, April, 1908.

the criminal from a strictly scientific standpoint, and try to determine the mental condition of the perpetrator at the time the crime was committed. You will all readily recall the startling stories with glaring headlines, narrated for weeks by the daily press, as to how a family of four persons were shot down in cold blood, in their own home, and an attempt at cremation made by burning the building. Julius Weber, the father, was shot through the heart whilst sitting on the toilet in the bath room. Mary, the mother, was shot through the chest, from one axilla to the other, probably whilst at the telephone calling for help, and again in the front of the chest, the bullet cutting the vena cava superioris near its entrance to the right auricle.

Bertha, the daughter, was also shot through the heart, and the little imbecile and crippled son, five years old, was beaten over the head with a blunt penetrating instrument, probably the hammer of a revolver, the latter having been grasped by the muzzle and used as a club. The smoke and gases of the burning house had completed what the weapon had begun, and the boy died in a moment after his rescue. The Weber home stood isolated on a hill in the outskirts of Auburn, and when discovered to be on fire, and no member of the family could be found, the whole household was supposed to have perished. However, in a few moments the son Adolph was found, coming out of a drygoods store where he had just purchased a new pair of trousers, and having the old pair that he had just taken off, held in a tightly rolled bundle under his arm. He ran lightly up to his burning home and going to a rear window broke the glass with his burden, at the same time hurling it into the flaming interior. He was not suspected of the crime at the time, and his actions were not closely noted, but it was afterward recalled by many that he seemed very cool and unconcerned throughout the excitement. When the bodies of his mother, sister and little brother were rescued, half charred and almost unrecognizable, some of the kind hearted neighbors, thinking that Adolph would be terribly shocked if he saw them, forcibly removed him from the scene and took him to the home of a friend of the family. I was called in to see him, as his condition was supposed to be bad, it having been understood for some time by the public that Adolph was weak and ailing. Before I arrived a rumor had spread that his mother was still alive. This rumor had reached him, and made him quite uncontrollable, he being determined to go and see for himself whether this was true. I saw him when in this excited state, but outside of a quiet but determined desire to go to his mother, he betrayed no symptom of excitement. His pulse was normal and he was not even paler than usual. I allowed him to go out in charge of two young men, and as soon as he ascertained that his mother was actually dead, he invited his companions to go into an *ice cream parlor and eat ice cream with him.* I will not take up any time in the details of these atrocious murders, but will pass on to

Family History.

Julius Weber, the father of Adolph, came from Germany when a boy, and had no relatives in this country. I can not give any details concerning him before he came to Auburn, as he was a very reticent man, and never spoke of his relatives to any one outside of his own family. He was a rather morose man, and had little to say to any one, even going around his own home for days without speaking a word. Could his history be traced it would no doubt be found that there was insanity somewhere amongst his progenitors. This, however, is but conjecture. He was an indulgent father, and gratified almost every wish of his children, of which he was very proud. He was a very healthy man, for I was family physician for twenty-five years and during that time I never treated him for anything but a broken leg. He was a brewer, and had accumulated a comfortable competence, amounting to about seventy thousand dollars.

The mother was also of German descent, with no history of insanity, or any of the nervous diseases. She was always healthy, both as a girl and woman, and had a cheerful temperament. The daughter Bertha was a bright, cheerful and intelligent girl, with considerable musical talent, normal in every way. The young son Earl, had severe convulsions when about one year old, and had an undeveloped and thickened skull. He had congenital talipes varus in both feet, and was an imbecile.

Adolph Weber was near the close of his nineteenth year when he committed his great crimes. He had no physical peculiarities, excepting a very long, straight nose, and a very sharp and protruding chin. His eyes were rather deep set and closer together than in the ordinary man. His complexion was callow and pasty. He was very light and agile on his feet, and was a good runner. He was born in normal labor; was a well developed child, and remained healthy until puberty. He had measles when about five years old, in a light form. Never had any of the other diseases of childhood, as far as I know, and as I was always the family physician, it would have been known to me if he had; and never had any disease accompanied with prolonged high temperature. He was a bright and promising boy, graduating from the grammar school in his fifteenth year, with an excellent standing in his class. He was very social in his ways during this period of his life, and companionable with his schoolmates of both sexes. During this time of his life, he was a loving and obedient son to his parents, and they were very proud of him, and his father destined him for a university course. When his little brother Earl was born, and until the latter was two years old, Adolph was perfectly devoted to him, spending hours daily in his care. He entered high school in his sixteenth year, and made good progress in his studies until about the close of the school, when he began to fall back in his lessons, and became irregular in his attendance, complaining about his health. At this

time he began to practise masturbation to excess. His second term in high school was entirely wasted, owing to desultory attendance, and he refused to attend at all after the holidays.

At this time he fitted up a room in the basement of a carriage shed and spent much of his time there. In it he carried on many senseless and cruel experiments on small animals and insects, torturing them in a cruel and abhorrent manner. His one amusement was in raising, training and fighting game chickens. If any of his chickens failed to win he would seize them, and literally rend them with his hands, and afterwards trample the mangled remains into the earth in wordless anger and with fiendish looks. He took long and solitary walks and runs, which kept him in good athletic training. He ceased all companionship with old schoolmates, holding little communication with any one saving one youth who had similar tastes in chicken fighting. He began to frequent brothels for the gratification of sexual desire; but even there he never unbent from his unsocial ways, so I have been informed. He was fond of chess, and was far above the average amateur in skill at the game. He played correspondence chess for several weeks in the latter part of his eighteenth year; to my knowledge winning nearly all of them. When he was eighteen he came to me to be circumcised, which I promised to do if he would bring me his father's consent. He said he wanted it done to aid him in overcoming the habit of masturbation. On the following day he brought his father with him, and I circumcised him. About one month subsequently he came back complaining of vague nervous symptoms, which I attributed to the reading of quack literature. I assured him that there was nothing really affecting him, outside of his own imaginary ailments, but he was not satisfied. He returned in a few days, when I endeavored to gain his confidence, so that he would believe me when I assured him that he had no real illness, but he only got angry and claimed that he knew better, and that he had something very serious undermining his health. I then advised him to consult some other reputable physician, and if my diagnosis was confirmed, to rest satisfied, otherwise he would fall into the hands of the quacks, and afford rich gleanings to that predatory horde. He did consult Dr. G. A. White, of Sacramento, whose opinion coincided with my own. But being still unconvinced, he placed himself in the hands of an "electric healer;" went next to an advertiser for "the troubles of young men," winding up with an Osteopath, who found the true seat of the trouble, "a dislocated lumbar vertebra?" Finally he returned home minus about one thousand dollars of his father's coin, as the latter believed in his boy's ailments, and was willing to spend money freely for his aid. He was still a victim to imaginary troubles, and became a sufferer from all the ills brought about by constant introspection. From this time, he became very morose and sullen, resenting any and all control. He assumed lordly airs in his family relations. He would not arise until the day was well advanced; ordered his meals to be cooked from specially prepared foods, and served separately and in state; became very abusive to his mother and sister, and often brutally struck his defenseless, imbecile brother, against whom he manifested a marked hatred. He would sit for long intervals in deep reveries, seemingly without breathing or winking, and if disturbed would snarl and scowl like a fiend. He went nowhere for the amusements of the young and normal man, but continued his frequent visits to the brothels.

Then came the robbery of the bank, followed by a visit of some weeks by the whole family to San Francisco. After his return Adolph became more morose and silent than before, and seldom spoke to any one of the family, save to order things done for him. He was seldom seen upon the streets, and then spoke only upon being addressed.

He spent his time mostly in brooding reveries, resenting any interference, and could not bear to be crossed in any way, flying into violent rages at trivial causes. He could not bear to be worsted in any way, either in argument, or even in a game of chess. His only amusements consisted in reading books concerning battles and bloodshed, with frequent visits to houses of ill-fame. During this period his mother frequently told her sister that she was afraid of Adoph, and that she considered herself in danger when he was in one of his rages.

Then came the murders, with quick suspicion of Adolph as the perpetrator. At the inquest, when in the presence of the blackened and charred bodies of his family, he never betrayed the least concern, or shed a tear. At the funeral, which he attended under guard, he still maintained his indifference, nonchalantly gazing in the faces of strong men weeping, and nodding to acquaintances. In prison he always maintained a calm front, but continually grumbled about the ignominious way in which he was treated, and of the nature of his food. He planned great battles upon the surrounding hills, in which tens of thousands were slain. He wrote bloodcurdling doggerel and filthy verses; quoted much poetry, in an erroneous manner, and applied it to his own position.

At his trial he never betrayed the least uneasiness when the most damaging testimony was given, and seemingly deemed it impossible that he could be convicted. He discharged counsel as his whims directed, engaging others in their stead. He would not allow the plea of insanity to be entertained by his lawyers, and got very angry if they mooted the question. He changed guardians twice, and wanted to change again, previous to his attaining his majority. He attained that age before his execution. When questioned by his guard, whilst in the Auburn prison, as to whether he robbed the Placer County Bank, or no, he merely answered, "If I did, it was just to show what I could do!" This statement he made with a very grandiose air. After his conviction but before leaving jail, he studied Spanish with one of his guards and made

good progress. He went to the gallows with great fortitude, and in silence.

From the foregoing history of this remarkable criminal, the most of which I have gathered since his execution, let us try and ascertain, if possible, whether the young man was a fiend in human shape, or insane. I will briefly sketch the symptoms of paranoia, as I have been able to glean them from the authorities I have had access to, and see whether they fit his case.

Paranoia (*para,* close to, and *nous,* understanding) has been divided into two types, early and late. (Paranoia originaria, and paranoia tarda, of Amadie and Kraft-Ebing.) It applies to a form of mental disease occuring in individuals capable of, at times, fine education and brilliant acquirements, yet possessing a decided mental twist. It has its origin in structural weakness of the nervous system, more often inherited than acquired, and bears a close relationship to mental imbecility. It is one of the rarest and most dangerous forms of mental disturbance, as the victim is able to *conceal his insane concepts* not only from his friends and the laity, but also from medical men, until an *outbreak of violent character* has taken place, which is not unlikely to *result in death or injury to others.* It is a disease with delusions and hallucinations of a chronically progressive nature, yet there is at the same time a retention of the reasoning faculties upon subjects other than those immediately involved in, and directly touching the person's mental defects, until there is a violent outbreak, or until the disease has progressed for years. The nucleus of the disease lies in systematized delusions of persecutions, or ambitious delirium. Up to the thirteenth or fifteenth year, the individual may pass an uneventful life, or may even be a brilliant scholar and a very merry and lovable companion, both in the family and out of it. Then begins the change. He no longer joins in the sports and amusements of his fellows. He drops all studies excepting along certain lines. He becomes cross and contentious in his family, and is contemptuous of all advice and restraint. He sits in dreamy reveries for hours at a time. He generally has grandiose ideas and persecutory delusions. He is indifferent to suffering outside of his own personality, about which he has morbid imaginings. He withdraws into his shell, and remains anxious, preoccupied with his misconceptions, and indifferent to all beyond the limits of his morbid egocentrism. In this stage of hypochondriacal depression or subjective analysis, he is mentally disquieted, and studies his morbid sensations, real or imaginary, and attaches importance to the most trivial symptoms. At a time when he should be making schoolboy love, and suffering from the milder attacks of love-sickness, he will have nothing to do with girls. As selfishness increases it expands into supreme egotism and vanity. He becomes suspicious, often of his own household, and thinks they do not treat him right, and that he is superior to them. Soon he is completely alienated from them, and acquires a delusion of persecution. Vanity and egotism brings delusions of power and grandeur. He whose ambition outruns his wits may develop any kind of grandiose delusion. The moral sense lessens steadily from the beginning, until it is absent altogether. The paranoiac has no feeling of altruism, and gets no pleasure from giving pleasure. The pain and trouble of others cause no pain to him. Whether he becomes a criminal depends on circumstances, and on whether or not he has the pseudo-courage necessary to commit murder. He is always a liar, and frequently has perverted sexual instincts. Erotic and political paranoiacs are the types most prone to commit serious crimes. Paranoiacs are often so intelligent as to appear to be entirely responsible for their conduct when they come in conflict with the law. Many of their crimes look like the acts of sane men, and are carefully planned and cunningly executed. They also often commit crimes under the influence of sudden impulse. A paranoiac is, as a general rule, perfectly capable of advising others and for years the reasoning powers may be quite good for subjects which do not affect him. Craig says, "it should never be forgotten that it is the paranoiac who, above all others, is likely to commit acts of violence." He is cunning and scheming, capable both of devising a plan and choosing the best moment for its effective execution.

With this short summary of the symptoms of paranoia, taken from the best authorities; and from the foregoing history of Adolph Weber's few years of life, we can arrive at no other conclusion than that the unfortunate young man was insane when he planned and executed his abhorrent deed.

In view of what I have stated it might be pertinently asked why I did not raise my voice in his defense, before his execution. I had three reasons for not doing so. Firstly, owing to my close relations with the murdered family, I held a deep abhorrence for the perpetrator of the crime, and was blinded to his rights. Secondly, I like nearly all other general practitioners, never made a study of psychiatry, and did not recognize the symptoms of the disease when they lay open to any one skilled to read them. And lastly, I never knew the mass of this evidence, until after his death. I have picked it up piecemeal since then, and can truly say that I am exonerated, on this point alone, if blameworthy on the others.

Literature.

Berkely—Psychiatry.

Craig—Psycological Medicine.

Stone—Paranoia, its varieties and medico-legal importance. Jour. A. M. A.

Brower—Bannister—Practical Manual of Insanity.

Tuke—Dictionary of Mental Medicine.

Magnan—Lectures on Paranoia—American Jour. of Insanity.

Sommer—Dagnostik d. Geisteskrankheiten.

Werner—Die Paranoia, Monographie

Neisser—Paranoia.

Seglas—La Paranoia, Arch. de Neurol.

Schule—Die Paranoia.

THE FALLACIOUSNESS OF SO-CALLED PATHAGNOMONIC SIGNS IN DIAGNOSTIC WORK.*

By C. M. COOPER, M. B., San Francisco.

Recurrent attacks of abdominal pain combined with a sensitive McBurney point are so commonly associated with a diseased appendix that in the minds and actions of many surgeons this association is given a pathognomonic significance which it does not merit, and the number of reported cases grow monthly in which, because of this symptom complex, an innocent appendix has been removed, whilst the offending ureteral stone situated at the brim of the true pelvis has temporarily eluded observation.

Rovsing in recognition of such fallacies lately described as pathognomonic of appendicitis the test which is now associated with his name (the production of pain at McBurney's point by indirect means), but Lauenstein has already reported a case in which this sign was present in cholycystitis. He concludes "It is not therefore pathognomonic for appendicitis, but merely indicates some circumscribed inflammatory process in the vicinity of the colon."

The continuous presence of occult blood in the stools after a certain restricted diet was for a time accepted as pathognomonic of the presence of a carcinoma of the alimentary tract, but we now know that apart from local rectal diseases the same phenomenon may occur in cirrhosis of the liver.

With the use of the thermometer and the recognition of the almost constant association of fever with inflammatory processes, such fevers came to be looked upon as specific to infections. As yet Freudweiler's studies demonstrating the frequent presence of fever in carcinomatous disease, and this not uncommonly in the absence of ulceration, have not found their way into the general text books, and one frequently hears it erroneously stated at the bedside that an intra-abdominal mass must be of an inflammatory nature because of the presence of more or less continuous fever. A similar misconception often leads to misinterpretation of the fever that may occur in the course of visceral syphilis, lymphosarcoma, lymphadenoma, and the blood diseases.

Respiratory System.—A chronic apical catarrh has so long been associated in our minds with tuberculosis that most of us have at some time erred in regarding such a condition as positively tuberculous when the further course demonstrated its influenzal character. Such occasional exceptions should, however, in no way invalidate the law that all such catarrhs should be treated as though they were tubercular till definitely proven otherwise.

The presence of acid-fast bacilli in the sputum is undoubtedly the surest sign we have of the tubercular nature of a lung ailment, but such bacilli are occasionally found, and yet the ailment be non-tubercular in character.

Given a case in which the findings indicated either a loculated pleurisy communicating with a bronchus or an intra-pulmonic purulent collection, one would think that pieces of lung tissue in the sputum showing the alveolar arrangement would speak imperatively for a diagnosis of the latter condition, yet such a conclusion was wrong in a case under the writer's care in which at operation a loculated empyema was found which communicated through a narrow channel with a bronchus.

A failure to obtain fluid by puncture in a suspected case of pleural effusion is no proof that an effusion is not present. I well remember an instance in which repeated punctures made by different physicians were unsuccessful. The patient refused operation. The postmortem demonstrated an extensive empyema with a greatly thickened pleura.

Cardio-Vascular System.—Many writers assert that all diastolic murmurs heard over the cardiac area denote organic valvular disease, but a diastolic puff is sometimes audible over the aortic and pulmonary regions which is apparently due to a mechanical diastolic movement of the air in the neighboring volume of lung tissue, for it may vary with respiration and may disappear altogether, and be unassociated with any other indications suggesting a valvular lesion. Further, Cabot has reported two cases in which a marked diastolic murmur strongly suggesting aortic incompetence was audible during life, and yet at postmortem the valves and orifice were intact.

Dr. Herbert Moffitt has repeatedly drawn attention to the fact that a malignant endocarditis may run its chronic fatal course exhibiting neither fever nor leukocytosis, both wrongfully supposed to be essential for its diagnosis.

The pear-shaped area of dullness that occurs in some cases of pericardial effusion is frequently absent in that condition, and may be present in some varieties of cardiac dilatation in which, postmortem, no effusion is found.

The presence of a *pulsus alternans* is even now considered pathognomonic of a loss of contractibility by the heart muscle, but apart from the fact that two such men as Hering and Wenchebach are not agreed as to what pulse tracings shall be included under this term, the writer on general principles would doubt its pathognomonic character, and it seems certain that many patients have a heart muscle of diminished contractile power yet never exhibit this variety of pulse.

The Urinary System.—The frequent association of renal colic and renal and ureteral calculi has given rise in the minds of many men to the idea that the presence or absence of one signifies the presence or absence of the other. This was strongly evidenced in a patient with one-sided pyelitis whom the writer saw through the kindness of Dr. Krotoszyner. This patient had passed through the hands of several urologists of good repute, and carried with him many analyses of the individual kidney secretions, but inasmuch as he had never suffered from pain of any kind no hint had been given him as to the possible presence of stones. The radiogram showed the shadows of four calculi in the right kidney pelvis.

* Read at the Thirty-eighth Annual Meeting of the State Society, April, 1908.

Albumen and casts have gradually fallen from their high estate of being the arbiters of the presence or absence of nephritis.

As Deanesley writes, "Blood uniformly mixed with the urine especially when the tint of the mixture has a brown or smoky appearance was formerly believed to be certainly of renal origin, but brown and smoky urine with blood uniformly intermixed may also arise entirely in the bladder when the bleeding is slow and not very abundant."

Accepting Mackenzie's views relative to the cause of the phenomena exhibited during an attack of renal colic, it seems questionable whether the whole complex cannot be imitated by a contraction of the gut segment that bears a spinal segmental relationship similar to that exhibited by the kidney. It is certain that the less violent seizures can be as I have seen such occur on the left side, the result of each seizure being the passage of flatus.

Nervous System.—Headache, vomiting, and optic neuritis are a triad of symptoms that we associate with the presence of a brain tumor or abscess, but Bright's disease and lead poisoning may call forth an identical syndrome; on the other hand a brain tumor may be found at postmortem which has given rise to no symptoms. How a tumor of the frontal region can cause localizing symptoms and signs often considered characteristic of a cerebellar tumor is evident from a perusal of the instructive reports of Collier.

The Babinski reflex is to-day often regarded as pathognomonic of disease of the pyramidal tracts, but Richter long ago reported its presence in one and one-eighth per cent of five hundred healthy persons whom he examined, and Rolleston has reported the frequent temporary development of a dorsal extension response of the big toe during scarlet fever.

Gowers in that fascinating book "Borderland of Epilepsy" in speaking of loss of consciousness in epilepsy, says, "Not long ago it was thought to be a constant feature; without such loss an attack was said not to be epileptic. We now know that minor attacks are common in which consciousness is only dimmed, sometimes hardly a ruffle on its surface attends the sensation which constitutes the slightest form of attack."

Thickened peripheral nerves as evidenced particularly by the ulnar nerves has been considered along with other suggestive signs as characteristic of leprosy, but I was able to demonstrate a number of such cases of ulnar nerve thickening in patients with atrophic muscles, the complex depending on general osteoarthritis.

Glandular and Blood Diseases—Serum Reactions, etc.—The presence of a huge number of lymphocytes associated with a big tumor in the left flank which might be of either renal or splenic origin would seem to point strongly to its splenic source, yet in a case referred to by Dr. Herbert Moffitt the converse proved to be true.

Eosinophilia at one time was considered to occur only in leukemia, but the list of diseases in which it may appear is now yearly growing. Subsequent to the enthusiasm which followed the discovery of the association of eosinophilia with trichinosis, it was looked upon as a constant sign in that disease, thus facilitating the diagnosis, but many exceptions have already been reported to which I am able to add another, the only case of this disease so far under my care. In this patient the eosinophiles numbered less than two per cent though the trichinæ were demonstrated in a piece of excised muscle.

A case of grievous diagnostic error through reliance upon the pathognomicity of that attractively simple, but not absolutely reliable Calmette eye reaction has already come to my notice.

The variation of the opsonic index to a particular organism after some procedure which is supposed to bring about auto-intoxication is in one clinic regarded as pathognomonic of an infection by that organism, but apart from the accuracy of the determining method which has lately been strenuously assailed, we question very much the pathognominity of the test, and believe no diagnosis should be made through reliance on it alone.

Radiographic Diagnosis.—It would seem that here at last one would be likely to obtain pathognomonic characteristics of many diseases, but at the present time such is not the case. An abnormal, apparently pulsatile, shadow in the posterior mediastinum is not always aneurismal notwithstanding statements to the contrary. Renal or ureteral calculi do not throw shadows which are specific in themselves.

The break in shadow continuity of a bone some weeks after its fracture is not pathognomonic that a firm, hard, useful union has not occurred, and Haenish has demonstrated that a syphilitically diseased bone can throw a shadow indistinguishable from that cast by a tumor.

There are a few signs, the names of which express their pathognomonic character. I will instance two.

1st. Gallstone crepitus. The only supposed instance of this that has come under my observation was due to a creaking of the lower rib cartilages.

2nd. Ureteral clots. The most typical worm-like specimens of these I have seen came from an old man with an enlarged, bleeding prostate, these clots having been formed in some part of the urethra.

In conclusion I would suggest that—

1st. The time has come to state and teach that there are no pathognomonic signs of the individual diseases, that the presence of such signs forms only one link in the diagnostic chain, and in no way excuses neglect of thorough and, if necessary, repeated investigations of our patients.

2nd. That the use of pathognomonic terms such as gall stone crepitus and ureteral clots had better be discarded.

THE REACTION OF ANAPHYLAXIS.

By LEWIS SAYRE MACE, M. D., San Francisco.

Ever since guinea pigs have been used for standardizing diphtheria antitoxin it has been observed that animals once injected with horse serum were liable to die upon subsequent injection although they were in apparently perfect condition and the first injection had been absolutely without bad effect.

This peculiar circumstance remained unexplained and in fact attracted very little attention until in 1904 during Erlich's visit to this country Theobald Smith mentioned to him his observation that a certain time interval between the first and second injection was a factor in the occurrence of the phenomenon. Erlich gave to Otto this problem to work out and the latter's monogram[1] "Das Theobald Smithsche Phanomen" was the result.

At the same time and independent of Otto, Rosenau and Anderson[2] of the Public Health and Marine Hospital Service made a systematic inquiry into the causes of death following injections of horse serum and in later publications[3 4] after collecting a great mass of experimental evidence they described in detail their observations on this most interesting subject.

Injections of horse serum in normal guinea pigs were found to be uniformly without result. Very large amounts were equally as harmless as small doses. If the injection was repeated within a short time or within a few days no unusual result occurred. If, however, the injection was repeated after an interval of ten or twelve days or more the animal died with definite poison symptoms consisting of:

1st. Evidence of peripheral irritation, violent scratching, etc.

2d. Pareses and paralysis, especially of the hind legs.

3d. Violent clonic convulsions and death from respiratory failure.

The amount of the initial injection bore no relation to the subsequent result. A fraction of a cubic centimetre sensitized as well, in fact better, than a large dose. 1/250 c. c. was often used as a routine for a sensitizing dose and one millionth of a c. c. was found to be effective in rendering the animal susceptible to subsequent injections.

For this condition of increased susceptibility to a foreign proteid the term Anaphylaxis was proposed by Richet in 1904 while he was working on the effect of actinia poison upon dogs. English speaking observers usually prefer to use the term hypersusceptibility, the translation of the German word ueber empfndlichkeit.

Other proteid substances besides horse serum have been found to possess the power of sensitizing animals to subsequent doses and to show the same poison symptoms when the necessary time interval has elapsed between the first and second dose. Both the serum albumin and globulin of the blood, the casein of milk, the proteid constituents of peas and beans and eggwhite showed similar sensitizing power and identical poison symptoms on reinjection. The result has been shown to be independent of precipitin formation and of the haemolytic power of the foreign serum. In general the reaction may be said to be specific, viz, horse serum sensitizes against horse serum, eggwhite against eggwhite, etc.

For some years Vaughn and Wheeler[5] of Michigan University have been working on the separation of a poison group from the proteid molecule. Recently, while working with eggwhite they have used its sensitizing power to prove that their separation was an actual one. They found that by heating eggwhite in a retort with absolute alcohol containing 2% sodium hydroxide they were able to split off a body which acted like an acid and gave the proteid reactions, except Molisch's test, which showed that the carbohydrate group was lacking. This substance when injected into animals was followed by the poison symptoms before described and death from respiratory failure.

The residue, or nonpoison portion also gave the proteid reactions including the Molisch test, acted like a base and when injected into animals even in large amounts gave no poison symptoms. It did, however, act as a sensitizer to the whole eggwhite, subsequent injections of which in sensitized animals were followed by symptoms identical with those caused by the separated poison group. Subsequent injections of the residue were followed by no poison symptoms thus proving that the separation of the toxiphore group had been actual and complete.

Vaughn and Wheeler offered a theory of the cause of this reaction of hypersusceptibility which coincides with the observed facts and at the present time may well serve as a working hypothesis. They assume that a primary injection of a foreign proteid is slowly split up into its poison and nonpoison groups by the antibodys thrown out of the cells. Slowly, because the animal being unaccustomed to this form of invasion is poorly supplied with the means of defense. The poison group is therefore liberated slowly and eliminated without doing harm. The body cells, however, have learned a valuable lesson, so to speak, and a second injection of the same proteid finds the animal well supplied with the antibodys necessary to destroy the invader. Rapid proteolysis of the foreign body follows, the result being the rapid liberation of a large quantity of the poison group and the consequent death of the animal. It may seem strange that the animal is destroyed as a result of its efforts at protection, but it should be remembered that in the natural course of events the only invading proteid is living proteid and that the condition of anaphylaxis would in this case enable the animal to destroy the invading germs before they had time to grow and multiply.

It will be noticed at once that the period of incubation of many of the eruptive fevers bears a remarkable relation to the time interval necessary for the production of anaphylaxis.

It is not strange, therefore, that attention should early have been turned to the production of arti-

ficial immunity by using the split products of the different pathogenic bacteria. It is yet too soon to draw any definite conclusion from the work done so far, but it is evident that this reaction has a decided and important bearing on the production of active immunity. The bacterial bodies of a number of pathogenic organisms are capable of being split into poison and nonpoison groups. Vaughn and Wheeler[7] and Rosenau and Anderson[3] working with colon and typhoid bacilli find that animals sensitized against these germs with doses of the nonpoison residue were able to withstand from six to eight times the minimum lethal dose of virulent living cultures. Work with some other organisms, particularly those which elaborate soluble, virulent toxins, has thus far not been so favorable, but research along these lines promises in the near future to add very much to our knowledge of active immunity.

The first question that arises on looking over the work done thus far on hypersusceptibility is the bearing this condition may have upon the therapeutic administration of antitoxic sera. It is evident that horse serum differs widely in its effect on humans and guinea pigs. A primary injection in man is regularly followed by symptoms of the serum disease after an incubation period of eight to thirteen days. A primary injection in guinea pigs is followed by no symptoms. A second dose in guinea pigs after the proper time interval is passed is followed by acute death. A second injection in humans is followed as a rule by symptoms so slight as entirely to escape notice.

Von Pirquet and Schick[6] quote eight cases of children who received a second injection of horse serum from 16 to 42 days after the initial dose. All showed this in common that symptoms of the serum disease appeared regularly after the first injection within the usual time of eight to thirteen days. After the second dose the symptoms appeared at once or within 24 hours, constituting what these authors call the immediate and the accelerated reaction. In a further series of 68 cases the same results were observed, viz., where the time interval between the first and second injection was more than 12 days the symptoms of the serum disease appeared within 24 hours following the second injection. This was the only sign in these cases of a condition of hypersusceptibility. Certainly this would tend to confirm the clinical observation that serious or fatal results following the injection of horse serum is in humans extremely rare.

Unfortunately, accidents are not entirely lacking, and the symptoms of the cases reported suggest very pointedly the acute proteid poisoning in a hypersensitized animal. The marked cyanosis, dyspnoea, cutaneous irritation, oedema and convulsions are common symptoms of all the patients whose cases are reported whether following the use of the antitoxic serum of diphtheria, streptococcus, or Maragliano's serum for the treatment of tuberculosis.

This latter agent is bovine serum from animals which have been immunized against tuberculosis by the whole bacilli plus their watery extract, and from reports of its use at the Phipps Dispensary we might conclude that bovine serum is more toxic than horse serum has proved to be. Laurence F. Flick[8] in the Third Annual Report of the Henry Phipps Institute, in discusing the use of Maragliano's serum says: "The complication of dyspnoea and cyanosis is a most peculiar one, difficult to interpret and most distressing to the doctor and the patient." Dr. Landis describes it as follows: "Two or three minutes after the injection was given the patient suddenly became cyanotic and dyspnoeic and was unable to lie down. The lips and fingers became blue and the face deeply congested. Within a minute or so she became nauseated and vomited. The cyanosis then cleared up and was followed by extreme pallor. While this is the only instance of this complication or accident recorded in this series of cases, it has occurred in other cases and the phenomena are always practically the same. In none of the cases in which it has occurred have the consequences been serious."

Here we have evidently to deal with the condition of anaphylaxis induced by repeated injection of bovine serum. That no more serious results occurred must be attributed to the fact that small doses, viz., 1 to 2 c. c. only were used.

Occasionally instances have been reported in which a single injection of antitoxic serum has been followed by unpleasant results, and in such cases we are probably dealing either with some unusual condition of intolerance to horse serum or with a condition of hypersusceptibility to this proteid. In this connection it should be noted that the condition of anaphylaxis is transmissible through the mother to her offspring, and this fact which has been thoroughly settled so far as guinea pigs are concerned is, I believe, the only instance in which the inheritance of an acquired characteristic has been experimentally proved. It may be that as time goes on careful inquiry will have to be made before giving serum if the patient's mother has had similar treatment and that fact, if such is the case, taken into consideration.

The minimum lethal dose for guinea pigs of the average weight was found to be 1-10 c. c. when given intraperitoneally. From this we may be justified in concluding that the lethal dose of horse serum for a sensitized human being is much higher than any amount which would be given except under the most unusual circumstances. This is probably the case since serious accident following its use is so rare. The few unfortunate results, then, must be explained as instances of very marked hypersusceptibility to this proteid and the problem of how to avoid trouble when giving serum to such individuals must be the object of future inquiry.

Besredka[9] has recently observed that the induction of ether narcosis appears to prevent the toxic symptoms following injection of serum in sensitized guinea pigs. Whether this procedure will effect the development of poison symptoms in sensitive human beings remains to be seen.

The amount of serum given to a sensitized individual is undoubtedly a factor in the production of poison symptoms so it would follow that the most potent sera only should be used for such cases and manufacturers should be encouraged to prepare for such use very high grade serum of the greatest possible concentration.

1. Otto R. Das Theobald Smithsche Phanomen der Serum ueber empfindlichkeit. 1905.
2. Rosenau and Anderson. Bull. No. 29. Hyg. Lab., U. S. Pub. Health and Marine Hospital Service, Washington.
3. Rosenau and Anderson. Bull. No. 36. Hyg. Lab. & Mar. Hosp. Service.
4. Rosenau and Anderson. Journal of Infectious Diseases, Jan. 30, 1908.
5. Vaughn and Wheeler. Journal of Infectious Diseases, June 15, 1907.
6. Von Pirquet & Schick. Die Serum Krankheit, 1905.
7. Vaughn and Wheeler. Experimental Immunity. N. Y. Med. Journal, June 22, 1907.
8. Third Annual Report of the Henry Phipps Institute, 1905-6.
9. Besredka Ann. d'l' Inst. Pasteur, Paris, 1907. XXI, p. 950.

DEVELOPMENT OF THE COUNTY MEDICAL SOCIETY.

PRESIDENT'S ADRRESS, SANTA BARBARA COUNTY MEDICAL SOCIETY.

By WM. T. BARRY, M. D.

The Santa Barbara County Medical Society was organized July 4, 1894. According to the official Register of Physicians of California for 1907, there were 59 licensed physicians in Santa Barbara county, of this number some 19 are either retired or have removed, leaving an active list of something like 40, of which more than one-half are living in Santa Barbara. Our society membership thus comprises over 50% of all the active physicians in the county, so that members as against non-members, are in the majority. Still, I am of the opinion that our membership should be increased, and also that we should be more careful to invite personally visiting physicians to our monthly meetings; and to this end I am appointing to serve for the year 1908 a special membership committee, with the earnest request that they will report on every eligible physician in the county and endeavor to secure his application for membership.

The medical profession, like everything else of this rushing twentieth century, has changed many of its ancient methods. The former method of "reading medicine" with the old medical student has disappeared largely from our offices—whether this is a gain or a loss, it is hard to tell; personally, I believe it to be a loss. But the greater and more marked change is noticeable in the medical society. The old-fashioned medical society, with its uncertain scientific methods, feeble membership and questionable standing, is gone forever, and in its place we have our modern vigorous county society, connected by perpetual affiliation with the state and national associations. A man can no longer speak disparagingly of his county society, or refuse to be a member of it without distinct and personal loss to himself, for if the society *is* poor it is his fault; and if he neglects, refuses, or renders himself unworthy of membership, he has lost scientific and professional standing, both at home and abroad; inasmuch as it is now everywhere expected of physicians that they at least do that much for the honorable profession by which they live, by maintaining an active medical society membership. And another important development of the County Medical Society is that it offers to all physicians an opportunity of demonstrating by their talents and education, a right and fitness for the practice they are competing for. So that instead of the old, dreary and lonely way of bidding for practice by hanging out a shingle and waiting, and hoping (often against hope) for somebody to appreciate and employ him, while striving to get acquainted, the properly licensed physician has but to join his County Medical Society, where he will be kindly received, if worthy, and the willing hand of his fellow-practitioner will (or should) assist him upon all proper occasions.

The future possibilities of the County Medical Society I believe to be very great. Among other things, I think the time may come when this society will operate its own hospital here in Santa Barbara county, and there would be advantages to such a plan. I recommend, when feasible, that we own our own buildings, to include a meeting room, a library and museum. I recommend all not at present active members of the A. M. A. to send in their applications at once; the fee is $5.00, which includes the weekly journal.

My plan throughout the year shall be to cooperate with the secretary and program committee in making our monthly meetings bright, fresh, entertaining and instructive. I propose also to call, from time to time, certain special sessions to meet and listen to some of the more eminent members of our profession, or to discuss such special matters as cannot be properly entered into at our monthly meetings. I plead for the active support of all gentlemen, who are members of this society.

And now, in conclusion, gentlemen, I beg to say that I appreciate deeply the honor you have conferred upon me, and shall endeavor to discharge my duties conscientiously. I propose the following motto as a guide for the new year, upon which we are just entering:

"They helped every one his neighbor; and every one said to his brother: Be of good courage."

A NERVE SEDATIVE.

By C. RENZ, M. D., San Francisco.

Having during the last few months received inquiries from a number of my confreres in regard to the use of bromural in cases when a sedative was indicated, I beg leave to present a short paper on the subject.

Bromural (alpha-monobrom-isovalerianyl-urea) was first isolated by Dr. Saam, who is with Knoll & Co., Ludwigshafen am Rhein. Pharmacological investigations made by Dr. v. d. Eeckhout, in the physiological institute of the University of Heidelberg, have shown the relative harmlessness of bromural. The clinical trial of this drug was first made by Drs. Krieger and v. d. Velden at the medical clinic of the University of Marburg (Professor Brauer). The cases treated with most suc-

cess were cases of simple wakefulness. Here bromural was used in doses of from 0.3 to 0.6 to produce sleep. Runck, who tried bromural in pediatry, found it superior to all other drugs in night sweats of phthisical patients. He maintains that bromural is a sedative for the cutaneous nerves, inhibiting the secretion of the sudoriferous glands.

I have used circa 540.0 grams in 30 cases up to November 1, 1907; and my experience, limited as it is, is nevertheless encouraging.

In one case of neuralgia of the plexus brachialis there was no effect to be noted. In one case of ophthalmoplegic migraine and periodic paresis of the oculomotorius the pain was alleviated by the use of this drug. Furthermore, in two cases of tic convulsive, the use of bromural prepared the patients for psychotherapeutic treatment; whereas, prior to the administration of the drug, they did not yield to suggestion. In two cases of heart disease (one a case of compensated insufficiency of the mitralis, the other a case of degeneration of the heartmuscle), the use of bromural benefited the irritable nervous condition and produced sleep, whereas, on the other hand, the bromide salts, validol, valyl, bornyval and the usual hypnotics did not bring any relief. In a case of tachycardia of nervous origin the accelerated heart action was reduced. In one case of epilepsy the effect was doubtful, because the patient had been under bromipin for a long time before the bromural was used. The rest of my cases were mostly neurasthenic patients, especially business men working under hard pressure and great responsibility. In these, as well as in the other cases I have mentioned, the bromide salts alone, or in combination with the newer valerian derivates, or the latter alone, did not give as good results as bromural. Very favorable was the effect in patients with morbid fears due to neurasthenia ("Centralangst").

Bromural is not a hypnotic in the ordinary sense; it is a nerve sedative. It has a calmative action, and indirectly produces a sleep which shows no deviation from the normal. Its action is more prompt than that of the bromide salts. It has not the depressing effect of the latter; it does not affect the stomach as the latter do; nor does it produce acne or stupor. So far as my experience goes, I have not seen any undesirable or unpleasant effects, nor any cumulative tendency. It certainly does not render the patient less capable for work—a fact which is so frequently observed after administering the other preparations of bromide. In the majority of my cases, bromural was given in doses of 0.3 three times a day, which seemed to be sufficient.

Notwithstanding the fact that new drugs are constantly being recommended, with more enthusiasm than objective criticism, for one thing or another, I still feel justified to call the attention of my colleagues to the use of bromural as a sedative.

BIBLIOGRAPHY.

Arthur Foxwell, Folia Therapeutica Nr. 3, July, 1907.
Th. Ruack, Bromural ein neues Nervinum, Muench. Med. Wochenschrift, April 9, 1907.
Dr. Saam, ueber Bromural, Pharmacologische Centralhalla, 1907, Nr. 8.
Dr. v. d. Eeckhout, physiologisches Institut der Universitaet Heidelberg (Prof. Gottlieb).
Drs. H. Krieger and R. v. d. Velden (Marburg) Deutsche Med. Wochenschrift, 1907, Nr. 6.
Prof. W. Erb (Heidelberg) Therapie der Gegenwart, Juni, 1907.
Prof. E. v. Leyden, Folia Therapeutica, Nr. 4, Oct., 1907; Medic. Klinik, Nr. 8, 1907.

ALUMNI MEETINGS.

To the alumni of the Kentucky School of Medicine—During the meeting of the American Medical Association there will be a reunion and banquet of the alumni of our college at the Auditorium Hotel, June 2, 1908, at 6:30 p. m.

The members of the faculty will be present, and hope to meet the alumni from the entire country.

An attractive musical program is being arranged and there will be addresses from the alumni and members of the faculty.

Address all communications to Dr. J. R. Pennington, secretary of the alumni committee, appointed by the American Medical Association for the Kentucky School of Medicine, 103 State st., Chicago.

The approaching meeting of the American Association will be held in Chicago, June 2-5, 1908. The Northwestern University Medical School is fortunate this year in having a combination of the alumni week with a meeting of the American Medical Association. One of the special features of this session of the American Medical Association is to be a series of alumni reunions of the different medical colleges in this country. Owing to the central location of Chicago and its unusual opportunities, we anticipate a larger attendance than usual. A cordial invitation is extended to every graduate of the Northwestern University Medical School to be present at the annual alumni dinner which will be held on Tuesday evening, June 2, at 5 p. m., at the New Illinois Athletic Club, 145 Michigan avenue.

ROBT. T. GILLMORE,
Chairman Alumni Week Committee.

FREDERICK R. GREEN,
Member of Alumni Committee for the N. W. University Medical School.

COLLEGE REUNIONS.

In connection with the approaching session of the American Medical Association, special college reunions are to be held on the evening of June 2. It has been decided to combine the annual commencement dinner tendered to the graduating class and the alumni, by the faculty of Northwestern University Medical School, with the alumni banquet to be held during the meeting of the American Medical Association. This dinner will be held at the Illinois Athletic Club on Michigan avenue on the evening of June 2. It is hoped that all graduates of the Northwestern University Medical School will be present at the meeting of the association and will attend this dinner. In order that this notice may reach all of our alumni we shall greatly appreciate it if you will announce this dinner through the news columns of your Journal.

NOTICE TO ALUMNI OF THE TULANE MEDICAL DEPARTMENT.

It is important that all graduates of Tulane intending to be present at the meeting of the A. M. A. in Chicago, June 2 to 5, should write at once to Dr. Hugh B. Williams, No. 100 State st., for information concerning the gathering of the alumni on June 2. Tulane headquarters will be at the Auditorium Hotel and alumni are urged to call upon their arrival for information. This is important.

COUNTY SOCIETIES.

ALAMEDA COUNTY.

The meeting March 17, 1908, was called to order at 8:40 by President E. M. Keys, who extended a few words of welcome to the members of the Homeopathic Society that were present. The minutes of the previous meeting were read and approved.

Program: Dr. A. Liliencrantz presented a specimen of a four months' fetus and placenta, which he had removed to-day in a case of ectopic gestation. The doctor said that he had heard that the society had asked for specimens or clinical cases, and that while he knew that we were all familiar with such cases, the peculiarity of this case, to him at least, was unusual. He had previously curetted the patient, and his findings only confirmed the condition he expected, namely, ectopic gestation. The laparotomy revealed the fetus not altogether within the Fallopian tube, but in the cornua of the uterus, a form of interstitial type. The pregnancy had probably commenced in the Fallopian tube, but in its growth had dissected up the wall of the uterus, simulating an interstitial tumor of the uterus. The fetus was alive at the time of its removal and gave one or two gasps. He had had a great many cases of ectopic gestation, but this was his first experience of the interstitial variety.

Dr. M. Lewis Emerson presented a case of Jacksonian epilepsy in a patient 54 years old, who came to him for the treatment of a severe burn which he had received from falling into a fire. His accident was preceded by a fit or epileptic attack which came on him about once a month, ever since he had his head hurt during the San Francisco earthquake. Previous to this accident these attacks were unknown to him. The head injury presented a well marked adherent scar over the left motor area. Observers who had seen the patient in one of these attacks stated that it commenced in his right foot and leg. While the patient was a syphilitic, the condition resembled so closely a case of traumatic epilepsy, that he thought an exploratory procedure was indicated since the last catastrophe nearly cost the patient his life. Authorities were not over enthusiastic about operating on a case of traumatic epilepsy, especinally after the fit habit was well established. If we were a little more thorough in our work in treating head injuries, there would be fewer cases of traumatic epilepsy.

Dr. G. B. N. Clow presented a paper entitled Peripheral Endarteritis terminating in Bronchial Thrombosis, also a specimen of the bronchial artery showing its diseased condition. The patient had a sister who suffered some vasa motor disturbance of the fingers, necessitating the removal of two fingernails of the right hand and one of the left. Two brothers died of tuberculosis. The patient came under his observation about three months ago, complaining of severe pain in his right hand, from which he was unable to find relief. The disease first appeared three years ago, but the affair was of a transient nature. The pain was worse at night, the fingers being cold and bloodless. The history and progress of the case point to Reynaud's disease. The pathological condition of the arteries of the hand and arm prove it to be a peripheral neuritis. The etiology of this remarkable disease is still obscure. On January 15th the arm was amputated at the upper one-third a few inches from the shoulder. An attempt was made to save a portion of the forearm, the old flap operation was performed and it was found that the blood vessels had become fibrous cords; consequently no hemorrhage occurred, although no tourniquet was used. So the amputation was made at a point where the blood vessels were normal. The night after his operation, the patient slept all night—the first night's sleep in three months. He was out of bed in four days and made an excellent recovery.

Drs. Archibald and Nusbaumer presented a paper on and a demonstration of the Opsonic theory, claiming nothing original but simply giving a synopsis of the work up to date after the method of Wright in treating infectious disease. Four years ago Wright gave to the scientific world his present theory. One of his discoveries was that until invading bacteria are acted upon by the opsonic agents, the leukoeytes refuse to have anything to do with them. The index represents the relative amount of opsonins in the serum of a specimen of blood to be treated as compared with the amount in normal blood. To illustrate this point, we will assume that we have determined the opsonic index of a tuberculous patient to be .5, containing one-half the normal quantity of opsonic agents which are essential to successfully combat the infection of the tubercle bacilli. Having determined the low opsonic index, the object of the opsonist is to supply the blood serum artificially with opsonins and thus facilitate the activity of the leukocytes. Wright has produced the solution of this problem by the use of bacterial vaccines. We are taught that the positive phase achieved by vaccination is only transient, and that it should be the aim to raise and maintain the opsonic index by the judicious use of vaccines. Stock vaccines are not all reliable. As to how far we may apply the index to the treatment of infections generally is a question for the future. The opsonins simply sensitize bacteria to the advantage of the leukoeyte, or in a few words, Wright's opsonins prepare bacteria for Mechnikoff's phagocytes to devour. Despite opposition to the therapeutic application, the discovery of opsonins must be regarded as a significant forward step in the study of immunity and pathology in general.

Dr. Nusbaumer then demonstrated the manner of collecting blood from a punctured ear, the way of diluting the same, also the manner of filling the capsules with blood to be tested. She also showed several microscopic specimens of phagoeytes in action or rather which had acted on bacteria which had been sensitized by vaceines. This work brought forth a most interesting discussion.

Dr. G. F. Reinhardt stated he had recently spent several weeks in Wright's clinic, and that while there he was fairly opsonized, but later consideration has led him to believe that the opsonic index is too variable to rely on it altogether. He was more interested in the vaccines which he thought were of positive therapeutic value.

M. LEWIS EMERSON, Secretary.

PLACER COUNTY.

The regular meeting of the Placer County Medical Society was held at Colfax on the evening of April 11th in the office of the president.

Dr. Peers presented several very interesting cases followed by a description of his experience and impressions while visiting the Tubercular Sanitoria at Saranac Lake and in Canada.

A motion was made and carried that it is the sense of this meeting that the resolutions adopted by the San Francisco County Medical Society, relative to the removal of Dr. Dudley Tait from the position of associate secretary of the state board of medical examiners, be and are hereby endorsed by the members of the Placer County Medical Society, and that the secretary be instructed to so notify the secretary of the San Francisco County Medical Society and also the house of delegates through the Placer county delegate to the meeting of the California State Medical Society.

After the regular order of business was completed those present concluded a very pleasant evening with a nice supper.

The next regular meeting will be held in Grass Valley the first Saturday in June.

G. H. FAY, Secretary.

BUTTE COUNTY.

The regular monthly meeting of Butte County Medical Society met at the office of Dr. Ella Gatchell at Chico, March 14, 1908. Members present: L. Q. Thompson, of Gridley; B. Caldwell, of Biggs; O. Stansbury, L. C. Perdue, C. L. Browning, D. H. Moulton and Ella F. Gatchell, of Chico. A paper on the plague was read by Dr. O. Stansbury and discussed by members.

Voted to change the night of meeting from the 2nd Saturday to the 2nd Tuesday of each month. The next meeting is to be held at the parlors of Pacific Hotel, Gridley, April 14th, at 6:30 p. m.

ELLA F. GATCHELL, Secretary.

RESOLUTIONS FROM SAN FRANCISCO COUNTY.

Whereas, A disease proved by numerous competent observers, both local and foreign, to be epidemic plague appeared in San Francisco during the month of May, 1907, and persisted in this community until January 30, 1908, since which time no new case has occurred; and

Whereas, The abatement of the disease in so short a period of time constitutes a sanitary achievement of the first magnitude and such achievement is the result of the unflagging zeal and the intelligent skill of the health authorities in charge of sanitation in this city; therefore be it

Resolved, That we, the members of the San Francisco County Medical Society do congratulate Dr. Rupert Blue and the officers of the marine hospital service at present on duty in San Francisco and its staff on the success of their untiring efforts in behalf of the sanitation of San Francisco; and be it further

Resolved, That this society has the fullest confidence in Dr. Blue and the Board of Health, and the Citizens' Health Committee, and hereby pledge them its influence and help in whatever work these authorities may deem essential to bring the sanitary work on hand to a successful issue.

NEW REMEDIES APPROVED.

The following articles will be added to the list of new and nonofficial remedies approved by the Council on Pharmacy and Chemistry:

Aromatic Cordial P.-M. Co. (Pitman-Myers Co.)

Oleum-Ricini Dulcis P.-M. Co. (Pitman-Myers Co.)

Atoxyl Hypodermic Tablets 1-3 grain (Koechl & Co.).

Novocaine Hypodermic Tablets 1-3 grain (Koechl & Co.).

NEW AND NON-OFFICIAL REMEDIES.

SALIT.

Salit consists chiefly of the salicylic acid ester or borneol, $C_6H_4.OH.CO\ (C_{10}H_{17}O) = C_{17}H_{22}O_3$.

Actions and Uses.—Salit is absorbed by the skin after inunction and is decomposed in the body, liberating salicylic acid in the tissues. It appears to be liable to produce some local irritation and eczema of a mild type. It is antiseptic. It is recommended in gout, articular and muscular rheumatism, neuralgia, erysipelas, pleurisy, etc. Dosage.—It is used only externally, undiluted, by penciling, or preferably by inunction with 5 to 10 Gms. (75 to 150 minims) of a mixture of equal parts of salit and olive oil. Manufactured by the Heyden Chemical Works, New York.

SALOPHEN.

Salophen, $(C_6H_4.OH.COO).C_6H_4NH.(CH_3CO)$, is the salicylic ester of 1, 4-acetaminophenol, $C_6H_4(NHCH_3CO)\ (OH)$.

Actions and Uses.—The actions of salophen resemble those of phenyl salicylate (salol). It is not changed in the stomach, but is broken up in the intestine, liberating salicylic acid and acetylparamidophenoal, which is not toxic, like phenol. It acts as an antirheumatic, antipyretic, antiseptic and analgesic. It has been recommended in rheumatism, gout, typhoid fever, and as an intestinal antiseptic, in diarrhea and dysentery. Externally it has been applied in psoriasis and other itching skin diseases. Dosage.—0.3 to 1 Gm. (5 to 15 grains), in powder, wafers or capsules. Externally in 10 per cent ointment. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

SALOQUININE.

Saloquinine, $C_6H_4.OH.COO(C_{20}H_{23}N_2O) = C_{27}H_{28}O_4N_2$, is the salicylic ester of quinine, containing 73.1 per cent of quinine.

Actions and Uses.—It is a tasteless substitute for quinine and salicyclic acid. Dosage.—0.5 to 2 Gm. (8 to 30 grains). Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merck & Co., New York).

SALOQUININE SALICYLATE.

Saloquinine salicylate, $C_6H_4.OH.COO(C_{20}H_{23}N_2O) + C_6H_4OH.COOH = C_{34}H_{34}N_2O_5$, is the salicylate of the salicylic ester of quinine.

Actions and Uses.—It is recommended in acute rheumatism, neuralgia, tabes, gonorrheal inflammations, etc. Dosage.—1 Gm. (15 grains). Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

SEXTONOL.

A mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain lime tonol 0.13 Gm. (2 grains); sodium tonol, 0.13 Gm. (2 grains); iron tonol, 0.03 Gm. (1½ grain); manganese tonol, 1.15 Gm. (¼ grain); and strychnine tonol, 0.00033 Gm. (1/200 grain).

Actions, Uses and Dosage.—See Glycerophosphates. Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

SIDONAL.

Sidonal $\begin{matrix}/CH_2CH_2\backslash \\ NH.2C_6H_7(OH)_4(COOH) \\ \backslash CH_2CH_2/\end{matrix} = C_{18}H_{34}N_2O_{12}$, is the normal salt of piperazine and quinic acid.

Actions and Uses.—Sidonal is recommended as a uric acid solvent in gout, neurasthenia, etc. Dosage—1 to 1.3 Gm. (15 to 20 grains) 5 or 6 times a day, dissolved in water. Manufactured by Vereinigte Chemische Werke Actiengeschaft, Charlottenburg (Victor Koechl & Co., New York).

SODIUM CACODYLATE.

Sodium cacodylate, $(CH_3)_2AsO.ONa + 3H_2O$, is the sodium compound of cacodylic acid $(CH_3)_2AsO.CH$, a dimethyl derivative of arsenic acid, $AsO(OH)_3$.

Actions and Uses.—The action of sodium cacodylate is similar to other arsenic compounds, but it is much less toxic than the ordinary preparations of arsenic, and is also less apt to cause undesirable side effects. This superiority is due to the slow liberation of the arsenic iron in the body. The cacodylate is particularly recommended in obstinate psoriasis, pseudoleukemia, diabetes, anemia, chlorosis, tuberculosis, malarial cachexia, etc. Dosage.—0.025 to 12 Gm. (½ to 2 grains) in pills, hypodermically or by eucma.

SODIUM CINNAMATE.

Sodium cinnamate, $C_6H_5CH:COONa = NaC_9H_7O_2$, is the sodium salt of *B*-phenyl-acrylic (benzene-propenoic), acid, $C_6H_5CH:CH.COOH$.

Actions and Uses.—Balsam of Peru, cinnamic acid and sodium cinnamate are recommended by Landerer for the treatment of phthisis, the drugs being injected intravenously under strict aseptic precautions. The effect is referred by him to an inflammatory raction, localized about the tuberculous foci and leading to cicatrizations. He records very favorable results in well-selected cases, and other clinicians have also reported some successes, although the treatment fails very often. The synthetic cinnamate is preferred on account of its purity. Dosage.—0.001 Gm. (1/60 grain), gradually increased to 0.02 Gm. (1/3 grain), in 1 to 5 per cent. solution, injected intravenously thrice weekly for long periods (3 to 18 months).

SODIUM ICHTHYOL.

A derivative of ichthyol containing sodium instead of ammonium.

Actions, Uses and Dosage.—These are the same as those of ichthyol. Its firmer consistence makes it more suitable for pills. Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

STOVAINE.

Stovaine, $CH_3C(C_2H_5)(O.CO.C_6H_6)CH_2.N.(CH_3)_2.HCl = C_{14}H_{22}O_2NCl$, is the hydrochloride of 1-dimethylamino-2-ethyl-2-propanol benzoyl ester.

Actions and Uses.—Stovaine acts as a local anesthetic of about the same power as cocaine, but dilates the blood vessels, whereas cocaine contracts them and exerts a tonic action on the heart. It is only 1/3 to 1/2 as toxic as cocaine. It is used as a local anesthetic; while most reports are favorable, one case of gangrene has been reported following the use of a 10 per cent. solution. Dosage.—Internally, 0.002 Gm. (1/30 grain) as pill. Locally it may be used in the eye in 4 per cent. solution and applied to other mucous membranes, as in laryngology, in from 5 to 10 per cent. solution. For hypodermic injections for local anesthesia it can be used in 0.75 to 1 per cent. solution. Manufactured by the Poulenc Freres Company, Paris (Walter F. Sykes, New York).

STYPTICIN.

Stypticin, $C_{12}H_{18}O_3N.HCl$, is the hydrochloride of cotarnine an oxidation product of narcotine, similar to hydrastinine.

Actions and Uses.—Stypticin is a hemostatic, analgesic and uterine sedative. The mechanism of its action is obscure. It has been recommended particularly in functional dysmenorrhea and menorrhagia of puberty and of the climacteric; in subinvolution of the uterus after parturition and abortion, as well as in all profuse uterine hemorrhages; in bleeding from the bladder, from the nose, after extraction of teeth, etc. Dosage.—Internally, 0.05 Gm. (3/4) grain) four to five times daily, in sugar-coated tablets or gelatin capsules; or by hypodermic injection (in urgent cases) 2 Cc. of a 10 per cent. solution; externally, as a styptic, pure or in strong solution. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

STYPTOL.

Styptol, $(C_{12}H_{17}O_3N)_2C_6H_4(COOH)_2$, is the normal phthalate of cotarnine, an oxidation praduct of narcotine, similar to hydrastinine.

Actions and Uses.—Its action resembles that of stypticin. Compounds with phthalic acid are said to have especial hemostatic properties. Styptol has been recommended in uterine hemorrhages. Dosage.—0.065 Gm. (1 grain) in sugar-coated tablets, 3 to 5 times daily. Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York.

STYRACOL.

Styracol, $C_6H_5.CH:CH.COO(C_6H_4.OCH_3) = C_{16}H_{14}O_3$, is the cinnamic acid ester of guaiacol.

Actions and Uses.—Styracol is an intestinal antiseptic and is claimed to combine the antituberculous actions of guaiacol and cinnamic acid. It is said to liberate in the intestinal canal a larger proportion of its guaiacol (up to 85 per cent.) than other synthetic preparations of that substance. It is recommended for the initial stage of phthisis, chronic enteritis and intestinal disturbances in general, catarrh of the bladder, etc. Dosage.—1 Gm. (15 grains) in powder or tablets. Manufactured by Knoll & Co., Ludwigshafen a. R. and New York.

SUBLAMINE.

Sublamine, $3HgSO_4.8C_2H_4(NH_2)_2$, is a compound of three molecules of mercuric sulphate with eight molecules of ethylenediamine (which see).

Actions and Uses.—Sublamine is a disinfectant, similar to mercuric chloride, over which it has the advantage of being non-irritating, more penetrating and readily soluble. Dosage.—It is used in 1:1,000 solution for skin disinfection and in 1:5,000 to 1:10,000 solutions for irrigations of the bladder, etc. It may be used in syphilis by injection into the gluteal muscles of a 3 or 4 per cent. solution. Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

SULPHONAL.

A name applied to Sulphonmethanum, U. S. P. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

SUPRARENAL ALKALOID.

The active alkaloid of the suprarenal (epirenal or adrenal) glands.

Actions and Uses.—Suprarenal alkaloid acts peripherally on a variety of structures, probably by stimulating the sympathetic nerve endings. Its most important therapeutic actions consist in a constriction of the blood vessels, with consequent high rise of blood pressure; a stimulation of the vagus center with slowing of the heart, and a direct stimulant to digitalis. Large doses also cause glycosuria; continued administration of large doses leads to atheroma. The effect of a single dose is very fleeting. It is not irritant. The effects are seen on local application and intravenous and intramuscular injection. When given to animals, by mouth or hypodermically, moderate doses have almost no action. Dilute water solutions rapidly lose their strength, the deterioration being accompanied by a reddish or brownish discoloration. The alkaloid is used mainly locally for its vasoconstrictor action, in hemorrhage, and in catarrhal and congestive conditions. It is said to cut short the asthmatic paoxysm (being used by spraying the larynx and by hypodermic injections). Intravenous injections are effective in shock and anesthesia accidents (care being taken not to give an overdose). It has also been recommended in heart disease, Addison's disease, etc., but opinions are divided as to the benefits to be expected from oral administration.

TANNIGEN.

Tannigen, $C_{14}H_5(C_2H_3O)_2O_9 = C_{18}H_{14}O_{11}$, is the acetic ester of tannin.

Actions and Uses.—Tannigen passes unchanged into the intestine, where it becomes effective as an astringent in contact with the alkaline juice. It is said to be free from irritant action. It is recommended in acute diarrheal affections, such as acute intestinal catarrhs, cholera morbus, cholera infantum and dysentery; it has also been used with reported success for the diarrhea of typhoid fever and intestinal tuberculosis. Dosage.—0.2 to 0.7 Gm (3 to 10 grains) four times per day, dry on the

tongue followed by a swallow of water; or mixed with food, avoiding warm or alkaline liquids. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

TANNALBIN.

Tannalbin is a compound of tannic acid and albumin thoroughly exsiccated.

Actions and Uses.—Tannalbin is astringent. Being insoluble in the gastric juice, it becomes effective when it reaches the intestines, where it slowly splits off tannic acid. It does not produce gastric disturbance. It is recommended in diarrhea, especially in that of children, and in phthisis. Dosage.—1 to 4 Gm. (50 to 60 grains) in powder (or tablets) followed by water; infant doses, 0.3 to 0.5 Gm. (5 to 8 grs.) in gruel or other mucilaginous liquid. Manufactured by Knoll & Co., Dudwigshafen a. R. and New York.

TANNOFORM.

Tannoform, $CH_2(C_{14}H_9O_9)_2 = C_{29}H_{20}O_{18}$, is a condensation product of formaldehyde with gallo-tannic acid.

Actions and Uses.—Tannoform is astringent and antiseptic. It is recommended on account of these properties in chronic intestinal catarrh and externally in hyperidrosis, bromidrosis, weeping eczema, ozena, etc. Dosage.—0.25 to 0.5 Gm. (4 to 8 grains); externally, pure or in 25 to 50 per cent. triturations (with talc) as dusting powder, or as 10 per cent. ointment or soap. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

TANNOPIN.

Tannopin, $(C_{14}H_{10}O_9)_3.(CH_2)_6N_4 = C_{48}H_{42}O_{27}N_4$, is a condensation product of tannin with hexamethylenamine..

Actions and Uses.—Tannopin is an intestinal astringent and antiseptic; it passes unchanged through the stomach, but, being gradually decomposed by alkalies, it becomes effective in the intestinal tract, exerting the action of its two components. Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for infants and children; 1 Gm. (15 grains) for adults, dry on the tongue, followed by a swallow of water, or sprinkled on food, four times a day. Manufactured by Farbenfrabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

REGISTER CHANGES

Abrams, Albert, from 2507 Pacific ave., to 246 Powell st., San Francisco.

Agnew, W. P., from 1170 Market st., to Pacific Bldg., San Francisco.

Alderson, Harry, E., from 2510 Washington st., to Shreve Bldg., San Francisco.

Amo, G. del., from 1922 Sacramento st., San Francisco, to ————?

Bailey, A. G., from Suisun, Solano county, to Alta Vista apartments, Bancroft way and Telegraph ave., Berkeley, Alameda Co.

Baily, Elisha I., from 758 Capp st., San Francisco, to ————?

Bine, Rene, from 1869 Buchanan st., to Union Sq. Bldg., San Francisco.

Bowerman, Albert C., from Gardena, to Elmonte, Los Angeles Co.

Boyes, Edwin J., from 1204 Broadway to Central Bank Bldg., Oakland.

Brandon, Alfred R., from Anderson, Shasta Co., to P. O., Corcoran, Kings Co.

Browne, A. F., from San Francisco to ————

Brown, Lura J., from Interne Children's Hosp., San Francisco, to ————?

Brown, Newell, J., Jr., from 131 W. 22d st., Los Angeles, to box 14, Stagg, San Bernardino Co.

Brownsill, E. S., from 2628 Durant ave., to 2614 Channing way, Berkeley.

Bryant, Edgar R., from 1944 Fillmore to Union Sq. Bldg., San Francisco.

Byron, A. E., from Pt. Richmond, Contra Costa Co., to Albany Blk., Oakland, Alameda Co.

Cease, H. W., from Fresno, to ————?

Chiapella, J. D., from Hollywood, L. A. Co., to French Camp, San Joaquin Co.

Clark, D. A., from Guadalupe, Santa Barbara Co., to 162 10th st., Oakland, Alameda Co.

Cole, C. C., from 1169 Broadway, Oakland, to 2214 Atherton st., Berkeley, Alameda Co.

Congdon, Maria, from Pasadena, to 315 Pico st., Los Angeles.

Cook, J. W., from 1336 Shotwell st., San Francisco, to ————?

Cothran, W. F., from San Jose, Santa Clara Co., to Dos Palos, Merced Co.

Craig, J. M., from 1510 Washington st., San Francisco, to ————?

Crosby, D., from 1260 High st., to E. 17th and Fruitvale ave., Fruitvale.

D'Arcy, W. N., from 927 Market st., San Francisco, to ————?

D'Ercole, Victor, from 303 Montgomery ave., San Francisco, to Petaluma, Sonoma Co.

Dozier, Wm. E., from Chico, Butte Co., to Susanville, Lassen Co.

Duncan, A. M., from Grant Bldg., to 924 Sunbury ave., Los Angeles.

Dunn, J. P., from Macdonough Bldg., to Union Sav. Bank Bldg., Oakland.

Earing, Edwin W., from 3999 to 3861 Woodlawn ave., Los Angeles.

Eckardt, A. O., from Gualala, Mendocino Co., to ————?

Edmonds, F. W., from 1264 Oxford st., to Wright Bldg., Berkeley.

Evans, J., from Black Diamond, Contra Costa Co., to ————?

Fearn, J. R., from 1163 Clay st., to 1115 Broadway, Oakland.

Foshay, A. W., from 1065 Washington st., Oakland, to Red Bluff, Tehama Co.

Gachenauer, D., from San Diego, to Angelus Hospital, Los Angeles.

Green, J. S., from 1115 Broadway to Bacon Bldg., Oakland.

Green, Jonathan, from 2802 California st., to 652 Clement, San Francisco.

Gross, Louis, from 2625 Clay st., to Oscar Luning Bldg., 45 Kearny st., San Francisco.

Hamilton, J. K., from 1217 Lincoln ave., to Encinal Hall, Bay Sta., Alameda.

Hanlon, E. R., from 201 Gough st., San Francisco, to ————?

Hatch, Herbert W., from Alton, Humboldt Co., to ————?

Henderson, J. J., from 1434 Post st., to Union Sq. Bldg., San Francisco.

Herrington, Howard, from 1007 Fillmore st., to 2053 Sutter st., San Francisco.

Hindley, G. J. D., from 1308 State st., to 1205 State st., Santa Barbara.

Holmes, Clara M., from 702 to 359 Telegraph ave., Oakland.

Houston, Albert J., from 2405 Fillmore st., to Union Sq. Bldg., San Francisco.

Hughes, Louie B., from 1935 California st., San Francisco, to ————?

Huntington, Ralph A., from Fruitvale Sta., Alameda Co., to Cloverdale, Sonoma Co.

Huston, R. J., from 162 Tremont ave., San Francisco to ————

Johnson, Abel W., from 710 14th st., to 2095 Market st., San Francisco.

Johnson, M. L., from Playter Blk., to 1219 Broadway, Oakland.

Kane, J. M., from Bacon Blk., to 1380 8th st., Oakland.

Keys, E. M., from 1627 San Jose ave., to M. E. Bldg., Alameda.

Lamoree, Edith V. A., from 1209 McAllister st., San Francisco to ————?

Lehnhoff-Wyld, Fred., from 1163 Van Ness ave., San Francisco, to ————?

Lum, Wm. T., from 1042 Santa Clara ave., to Park st., and Center ave., Alameda.

Mangold, Wm. G., from 665 Broderick st., San Francisco, to ————?

Mansfield, I. L. R., from Wyandotte, Butte Co., to ————?

Martindale, John H., from O. T. Johnson Bldg., to Auditorium Bldg., Los Angeles.

Mayon, Jas. I., from 1512 9th ave., to Central Bank Bldg., Oakland.

McArthur, Wm. T., from Hellman Bldg., to Security Bldg., Los Angeles.

McCarthy, D. S., from Bradbury Blk., Los Angeles, to "The Bothin Blk.," Hemet, Riverside Co.

McCracken, C. L., from Pescadero, to Redwood City, San Mateo Co.

McFadyen, John, from Chico, Butte Co., to Oakland, Alameda Co.

MacGowan, Granville, from Merchants Trust Bldg., to Lissner Bldg., Los Angeles.

McGrath, Peter Jas., 1441 O'Farrell st., San Francisco, to ————?

McGuire, J. A., from Los Angeles, to 54½ Pacific ave., Santa Cruz.

McKee, Albert B., from 2401 Fillmore st., to Union Sq. Bldg., San Francisco.

McMahon, Frank A., 754 Golden Gate ave., San Francisco, to ————?

Miller, Chas. F., from Gardena, to 4501 Central ave., Los Angeles.

Murphy, R. W., Jr., from 1601 Gough st., San Francisco, to ————?

Nelson, Thos. J., from 609 E. 6th st., to Lissner Bldg., Los Angeles.

Nixon, Anne W., from Sterling, Ill., to 936 Gratton st., Los Angeles

Nushbaum, Adolph, from 824 Eddy st., to 865 Fillmore st., San Francisco.

Overend, E. J., from 1166 Broadway, to Macdonough Bldg., Oakland.

Pius, Chas., from St. Luke's Hosp., San Francisco, to Guadalupe, Santa Barbara Co.

Potts, John S., from 1476 Eddy st., to Pacific Bldg., San Francisco.

Redington, Vida, (name changed to Bolkhardt) from 1668 10th st., Oakland, to 2729 Deakin st., Berkeley, Alameda Co.

Reinhardt, Geo. F., from 2403 to 2345 Telegraph ave., Berkeley.

Russ, Raymond, from 2510 Washington st., to Shreve Bldg., San Francisco.

Sawyer, H. C., from 2092 O'Farrell st., to 1209 11th ave., San Francisco.

Scott, Alf. J., from Orange, to 119 S. Fremont ave., Los Angeles.

Selzer, Edward, from Eureka, Humboldt Co., to ————?

Sherer, Wm. W., from L. A. Co. Hosp., to Lissner Bldg., Los Angeles.

Shields, Lillian, from Fabiola Hosp., to 460 13th st., Oakland.

Smith, W. O., from ————? to Chestnut st. and Encinal ave., Alameda.

Snook, John, from Bushnell Place, to Studio Bldg., Berkeley.

Soelgaard, E., from Hydesville, to Rio Dell, Humboldt Co.

Starr, F. R., from 2964 Steiner st., San Francisco, to Phys. Bldg., Sacramento.

Stephens, C. Perry, from Black Diamond, Contra Costa Co., to ————

Stevens, Geo. M., from 1426 W. 24th st., to 2405 S. Hoover st., Los Angeles.

Sweetser, G. W., from Martinez, Contra Costa Co., to ————?

Tinsman, C. M., from Adin, Modoc Co., to Fall River Mills, Shasta Co.

Turner, E. C., from 212 I st., to Pommer Bldg., Sacramento.

Underwood, M. F., from Ferndale, Humboldt Co., to ————?

Vickerson, J. I., from 7th and Peralta sts., to 1564 8th st., Oakland.

Watkins, Jas. T., from 2418 Washington st., to 2403 Fillmore st., San Francisco.

Watt, F. W., from Placerville, to Pinogrande, El Dorado Co.

Wilson, Hermon Fowler, from 898 Fillmore, to Monadnock Bldg., San Francisco.

Woolsey, F. R., from 1st Nat. Bank Bldg., to 2244 Dwight Way, Berkeley.

Worley, H. F., from 1117 Washington st., to Bacon Blk., Oakland.

Wright, A. H., from 1334 McAllister st., to 1542 Devisadero st., San Francisco.

New Names.

Bradbury, R. M., San Luis Obispo, Long Island Coll. Hosp., N. Y., '89 (c) '01.

Foster, W. S., 616 14th st., Oakland, Boston Univ., '97 (c) '98.

Hanlon, E. W., Lissner Bldg., Los Angeles, P. & S., N. Y., '93 (c) '94.

Martin, H. G., 103 Berkshire st., San Francisco, Cooper Med. Coll., '02 (c) '02.

Meacham, S. T., 521 12th st., Oakland, P. & S., Keokuk, '82 (c) '99.

Winslow, T. H., Union Sav. Bank Bldg., Oakland, Hering Med. Coll., Ill., '97 (c) '97.

Dropped, Suspended or Resigned.

Battle, S. W., Petaluma.
Blodgett, W. L., Willits.
Cockrill, B. T., Bloomfield.
Hawkins, Jas. H., Reno, Nev.
Reynolds, R. G., Upper Lake.

Deaths.

Contra Costa Co.—Devore, Josiah S., Pinole; Parkinson, Manuel C., Antioch.

New Members.

Alameda Co.—**Boyes, E. B.,** Central Bank Bldg., Oakland; **Dunn, Wm. L.,** 1065 Washington st., Oakland; **Smith, K. B.,** San Leandro.

Contra Costa Co.—**Reamer, H. C.,** Danville.

Glenn Co.—**Lund, Etta S.,** Willows (member of Yuba-Sutter Cos.).

Humboldt Co.—**Calhoun, S. F.,** Arcata; **Loveren, Geo. Stillman,** Alton; **Mercer, Clarence M.,** Eureka.

Los Angeles Co.—**Garrett, Edw. H.,** Secretary Bldg., Los Angeles; **Jones, W. H.,** Long Beach; **MacCoy, Wm. E.,** Bradbury Blk., Los Angeles; **Sheffield, H. H.,** Santa Monica.

Mariposa Co.—**Kylberg, H.,** Mariposa (member of Merced Co.).

Merced Co.—**McClelland, Jas. L.,** Los Banos; **McClelland, S. J.,** Los Banos; **Wade, Chas. F.,** Los Banos.

Napa Co.—**Rand, H. T.,** Sanitarium.

Sacramento Co.—**McKee, Chas. B.,** Sacramento.

San Bernardino Co.—**Savage, Philip M.,** Chino (member L. A. Co.).

San Diego Co.—**Shannon, Jas. W.,** San Diego.

San Joaquin Co.—**Tower, A. M.,** Lodi; **Welti, Laurence,** Stockton.

San Luis Obispo Co.—**Rookledge, P. L.,** Cambria.

San Mateo Co.—**Offield, A. L.,** Burlingame.

Sonoma Co.—**Shipley, W. C.,** Cloverdale.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI JUNE., 1908. No. 6

EDITORIAL NOTES.

A WORD EXPLANATORY.

At the Coronado meeting, one or two members of the Society stated to the editor that some members—the number or proportion seemed to be but vaguely known—were restless under the assessment of $3 which is paid by every county society to the State Society for each of its members. It was stated that a number of members could not see what good or benefit was derived from the State Society membership; and that, if they could, they would belong only to the county society. There were also some other things said, all of which the editor took unto himself and mentally digested. As a result, when the House of Delegates met and reports were being presented by the officers, the editor took the occasion to present, verbally, a resume of his connection with the Society and his views on the subject of the proper work of the Society. After the session he was requested, by a large number of delegates, to place the remarks in writing and publish them in the JOURNAL. It is for this reason that the following very personal editorial has been written and here appears. And for the reason that it is so personal, something distasteful to the editor himself, this word of explanation has been made.

Are Medical Organization and the State Society Worth While?

I ask your indulgence, for a few moments, that I may present to you some facts, partly historical and partly statements of altruistic purposes; but I believe that they are of sufficient importance to require your attention.

In 1902, at the request of the council, I assumed the editorial control of your JOURNAL—in fact, started it. This was not hastily done but only after due consideration and careful thought; nor was it done with any misunderstanding existing between myself and the Council. I had for some time been studying the awful proprietary degradation to which our profession had been brought, and it seemed to me that a change might be brought about if, even in one state, the medical profession could be brought together and shown just a little of the actual condition. It was well known, at least to the then members of the Council, that I proposed, as editor, to use the full strength of the JOURNAL for this purpose and to further the ends of medical organization and the medical control of public health matters.

As you all know, conditions in the medical profession in this state were, at that time, chaotic, to say the least. The State Society had never numbered more than 350 members and very few counties in the state could boast a county medical society. War had reigned in our profession constantly for much more than a quarter of a century. Of health laws there were, practically, none; our State Board of Health could only exercise an advisory activity which it did in a most unsavory manner. The Council decided to undertake the better organization of the medical profession in the state and they asked me to conduct the work. Before the end of 1903 a considerable number of county medical societies had been organized, and during the following year the work was continued. In some sections where meetings were called to organize county medical societies, it was necessary for the Councillors present to introduce to each other medical gentlemen who had been living in the same town for years, but were not on speaking terms.

The work proceeded; at times, most discouragingly; but there was enough of encouragement to warrant keeping it up and enough to make me believe that much betterment might come about in the course of years. Again I thought the whole matter over carefully. I realized that the Society could not ever, no matter how it might grow, nor how its JOURNAL might prosper, pay me an income in any way approaching that which I had earned in practice and could earn again, either in the same way or if my time were wholly devoted to other things. But it also was evident that the Society would be in a position to pay enough to provide a sufficient living and cover my modest wants; it was also evident that some of the objects

for which we should stand and for which we should fight, could be achieved.

Was it worth while to give the best years of a man's life to this work, or not? Did it appear that the results would be commensurate with the effort? To me it did so appear. The dawn of a better day for decent materia medica products more honestly and more truthfully put before our profession, was already breaking. In many counties large and influential county medical societies had come into existence. The influence of the profession was being felt in the legislature. It seemed worth while—to me.

But does it seem worth while to you? Does it seem worth while to strive for a live, active, studious, respect-compelling medical society in each county; which will be, de facto if not de jure, the board of health of that county? To bring about a condition of public instruction in public health matters which will insure respect for our profession in the public mind and obedience to our mandates in public health matters? To bring an end to those bitter and disgraceful fights among medical men which have been a lasting disgrace to our profession and have brought us into ridicule in the public mind and the public press? To promote peace and harmony in our ranks and a common purpose to be better physicians, better citizens, more watchful for the public good, more strenuous for the protection of life and health—particularly of the children of our state? To see to it that the men, the voters of our state will be so educated to the fact that our profession is striving to *prevent disease,* and that it is a friendly, studious unit, knowing full well what is best for the public protection, that no legislator will dare go to Sacramento and there cast his vote against any measure intended for the public health and supported by the united medical profession? To teach the public that tuberculosis is a preventable disease and need not kill its enormous quota; to teach them that typhoid is a filth disease and that he who has it has taken into his stomach, through his mouth, the feces or the urine of some other human being?

Is it worth while, do you think, to throw off the disgraceful yoke of the proprietary medicine manufacturer and to demand that he deal honestly and truthfully with us and not cause us to put, we know not what, into our patients or to sacrifice their lives through his lies and to his gain? Is it worth while to make of our societies educational centers so that each physician may profit from them and so that the public may come to know that the medical society exists for the purpose of the self-betterment, the self-government, the self-education of its members and consequently is of that much direct benefit to the public—and that the medical man who does not belong to, and take an active part in, his society's work, is by that much the loser and less well equipped physician?

Is it worth while, speaking from a purely material standpoint, to show to the public that it is an expensive thing for a physician to keep well equipped, mentally and instrumentally, and that he who pays cheap fees must necessarily get cheap and poor service? To show them that the bill for contract medical service, or lodge service, is a mighty heavy one, in the long run, and that *it is the sick man who pays it?* To instill into the public mind a knowledge of the fact that decent fees must be paid in order to properly support physicians and thus ensure their maintaining a proper standard of education and up-to-dateness? To force insurance companies to a realization of the fact that they must pay decently for professional services; that medical men are not merely corporation pups?

Is the JOURNAL of your society worth while? Is it of any value to you? Does it in any way bring you into touch with other parts of the state, with what men in other counties are doing, with what is going on in the work of your fellow physicians elsewhere? Does it ever offer you anything of value to yourself? If not, it is useless; let us stop it.

The constitution of our state society says that the society exists for certain purposes: "To federate and bring together into one compact organization the entire medical profession of the state * * * to extend medical knowledge and advance medical science; * * * to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition, and to enlighten and direct public opinion in regard to the problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public, in the prevention and cure of disease, and in prolonging and adding comfort to life." Are these things worth while or are they not? That is the question which squarely confronts us. Those are the purposes for which the Society was organized; for which it exists, if so be it exists for anything. Are they worth while?

If it is not worth while to do these things—all of them, or any of them or so many of them as we may be able to do, then in God's name, let us find it out at once! If it is not worth while to strive for all this betterment, then let us cut off a lot of unnecessary work and expense. Reduce assessments to a minimum; stop the JOURNAL; close up the office; abandon all effort to educate the public; let the legislature ignore, again and forever, the welfare of the people; let chaos reign again as it reigned before—and let me devote my time and attention to other, and, speaking financially, more profitable things.

But if these things are worth while—and it is up to the members of the medical profession to say whether or not they are to be considered as worth working for—as worth while—then let us get busy and each one do his best and his hardest to

bring them about. Work can not be done without the expenditure of fuel; and fuel costs money. Let every delegate go home to his county society and tell them exactly what the state Society stands for; what the altruistic aims and desires of its council and its secretary are; what we are striving to accomplish and with how little available money. Explain to them, from the financial statements which are in your hands, just where the income of the Society comes from and just where it goes. If it is the opinion of the members of county societies that all this effort, this work, this expense is useless and needless and foolish, then let us find it out and stop it; otherwise, let us go ahead with it as actively as possible.

Most assuredly, unless there is a desire for the work to be done, unless there is active co-operation all over the state; unless there is a real and genuine feeling that these things are worth the doing and that the heart of the medical profession is in sympathy with them—actual and active, not merely passive—unless every man stands ready and willing to do his part to help make some of these things come true, why I certainly have no desire to waste any more of my time on work that is undesirable. Better far that we stop at once, rather than to go further with what is of no interest and no value to those for whom it is intended. But let us have no misunderstandings; let us get as far away from hypocrisy as the good Lord will let us; let us be honest with ourselves and if we undertake to do these things, let us do them as well and as thoroughly as we can.

Peace, harmony, respect and that honorable repute which should be ours in every community, can not be secured with a club nor through strife. They may be had only by industry and painstaking work. Let every community in our state come to realize that its medical society is one of the most valuable assets in its position; that its medical men there meet for study to the end that their services may be more valuable to the public; that the only "medical trust" is the trust of the people's health which we took into our hands when we assumed the duties and the responsibilities of the physician; that the altruistic work of our profession in dealing with the problems of preventive medicine is entirely and essentially different from the work of any other profession or calling and that the people alone benefit from our energies; let these things be done and the people so taught and we shall see an end to the injurious practices of contract and lodge work and an end to the scoffing against our profession which is so common in the lay press.

It is for these things that the Society is supposed to exist; it is to secure the accomplishment of these things that I have given my time and my energies; but no one man can do much alone; every member of every county society in the state must do his part, and if every one *will* so do his duty, we shall soon see results accomplished which, a few years ago, we would have thought utterly impossible of attainment. Is it worth while?

UPON THE ANATOMY OF THE THYROID AND PARATHYROID.*

By ALLEN F. GILLIHAN, M. D., Berkeley.

Upon removing the muscles of the anterior part of the neck, viz., sterno-mastoid, sterno-hyoid, omo-hyoid and sterno-thyroid, we find lying directly upon or rather around the upper end of the trachea, a very vascular, irregular-shaped, gland-like structure; the thyroid body. It is made up of lateral lobes connected by the isthmus. Each lobe is of an irregular, pyramidal form of three surfaces. The anterior or antero-lateral surface of each lobe is in contact with the sterno-thyroid, sterno-hyoid and omo-hyoid muscles; the internal or mesial surface is in contact with the trachea, the recurrent laryngeal nerve and the esophagus; the posterior or postero-lateral surface is in contact with the carotid sheath containing the great vessels and nerves of the neck, the scaleni and longus colli muscles and the pre-vertebral fascia.

The whole gland weighs from thirty to sixty grams. Each lobe is about five centimeters in length and from two to three centimeters in breadth, the right being usually the larger. The isthmus is about one centimeter in length and in breadth; there is occasionally seen a single pyramidal lobe arising from the isthmus or from the adjacent border of either lobe which may extend upwards in front of the trachea, sometimes as high as the pomum Adami.

The exact location of the gland varies; the bases of the lobes are usually situated at about the level of the fifth or sixth tracheal ring, and the apices lie by the sides of the thyroid cartilage. The isthmus usually lies upon the second and third tracheal rings. It is important to remember that these positions may vary, the isthmus possibly being higher or lower, or even in some cases of probably defective development, entirely absent.

The thyroid is one of the most vascular organs of the body, being supplied in all cases by four distinct arteries, and in some cases by five. Each lobe is provided with a superior and an inferior thyroid artery; the superior thyroid artery is the first branch given off by the external carotid, it usually enters the front surface of the apex at each lobe; the inferior thyroid artery is from the thyroid axis—a branch of the sub-clavian—this usually enters the under surface of the base. Besides these there is sometimes a thyroidea ima, a branch from the innominate or arch of the aorta that ascends directly in front of the trachea to the isthmus. The superior and inferior thyroid arteries subdivide into many branches which ramify over the surface of the lobe before penetrating the capsule. In nearly every case very free anastamosis occurs between either the inferior and superior of one side, or between the inferior thyroid arteries of each lobe by way of the isthmus, rarely between the superior thyroid arteries.

The veins are large and numerous. After forming a plexus upon the surface, they unite to form the superior, middle and inferior thyroid veins. The

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

first two, superior and middle, cross the carotid on the way to the internal jugular; the inferior thyroid veins are important, they descend upon the trachea, communicating freely with each other and terminating the left broncho cephalic vein.

In performing tracheotomy it is important to remember the large size of these veins, the possible existence of a thyroidea ima, and possible variation in position of the isthmus.

Histologically, the thyroid consists of a mass of short branched glandular tubules or follicles, supported by a dense fibrous stroma, and surrounded by a thin but firm capsule.

The follicles are ovoid saccules or short branched tubules formed by a single layer of cuboidal epithelium mounted on a basement membrane. These follicles vary greatly in diameter; in some there is scarcely any lumen, in others the lumen is so large as to be almost cystic. The epithelium is typically simple cuboidal, each cell containing a single spheroidal nucleus in a granular and decidedly acidophile cytoplasm. In all those follicles that possess an appreciable lumen, a homogeneous, eosin-staining material is found, called colloid. This colloid is also found in some of tubular epithelial cells, probably indicating a stage of secretory activity. There is no duct to the thyroid; but, possibly, the follicular contents finds its way into the general circulation through the intercellular canalicul and the lymphatic vessels, colloid material having been repeatedly demonstrated in these passages.

Although many writers, previous to 1880, had described lymph nodes, accessory thyroids, or other similar bodies in the regions of the thyroid, it remained for Sanstrom to demonstrate beyond doubt that there were constantly present certain small, epithelial, glandular organs in this region which he designated *glandulae parathyroidea*. It is very probable that there are in man four parathyroid glands, two on each side; however, owing to variation both in their size and position, it is quite possible for one or more of them to escape detection, or again occasionally there may be a union between two of the glands so that they appear as one mass.

In size they may vary from three to fifteen mm. in length. The average as given by Berkeley is about 6x4x2 mm. They are, in shape, a round or oval flattened plate.

The color has been described as a brownish red or reddish yellow. The latter from the presence of fat, which is most noticeable in the aged.

The location of these small bodies is not always constant; they are usually found in relation with the posterior margin of the lateral lobes of the thyroid. They may be found as high as the hyoid bone or as low as the thymus. In the words of Welsh: the superior parathyroid of each side is much more constant in position and much more easily found than the inferior gland. It may as a rule be said to lie on the posterior wall of the esophagus or pharynx, at the level of the lower edge of the cricoid cartilage, immediately internal to the posterior margin of the lateral thyroid lobe, and in front of the prevertebral fascia. The two inferior parathyroids are more varied in their location; however, it may be safe to say they will be found usually within one centimeter of the lower borders of the lateral thyroid lobes, usually inferior to the branches of the inferior thyroid artery that pass to the posterior surface. Geis says, "the inferior parathyroids are more difficult to find for the following reasons: First, they are not in so close relation to the posterior thyroid capsule; second, they are often imbedded in loose fat just below the gland; third, their smaller size."

Vascular supply.—Evans, in his work with Halsted, has demonstrated the following facts in regard to the blood supply: Each parathyroid is always supplied by a definite parathyroid artery. Second, these parathyroid arteries, superior and inferior, usually arise from the inferior thyroid and superior thyroid vessels.

The minute anatomy of the parathyroids characterizes them as being entirely different from the thyroid in structure.

Welsh describes two distinct types of cells: Type one, the princial cell—most numerous—ovoid element with a clear cytoplasm—a distinct cell membrane—a large spherical nucleus with an irregular distribution of the chromatic. Type two, acidophile cell—less numerous—of similar shape—with small spherical nucleus—very rich in chromatic and a granular acidophile cytoplasm. The distribution of these cells is subject to variation; they may form a solid mass of cells with capillaries here and there, larger vessels running in the coarser trabeuclæ of fibrous stroma. Sometimes we find the epithelial cells arranged in small alveoular groups or branching columns, surrounded by a network of capillaries. And occasionally the epithelial cells surround a central lumen in which are small masses of an acidophile substance resembling colloid.

Richardson, however, states that material to be retrograde or degenerative and not a higher stage of glanular development. Although these three types of distribution have been noted, it is most common to find a combination of all these present in the individual gland.

MEDICAL TREATMENT OF GOITRE.*

By DUDLEY FULTON, M. D., Los Angeles.

The subject-matter of this paper will be devoted largely to the medical treatment of Graves' disease, for the reason that but little may be expected from medical treatment in the other forms of goitre.

Thompson, in writing of Graves' disease recently, mentioned the fact that there are in existence some twenty-five hundred books, treatises and articles on exophthalmic goitre; but all the experimental research and clinical observation to which this voluminous literature testifies have served only to illustrate the manifold uncertainties connected with the subject. The fact that nearly every known therapeutic measure, both internal and external, has been used in the treatment—many of these having been

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

hailed as specifics—gives further evidence of the truth, that like other affairs of mankind, so, concerning the real nature of the affection known as exophthalmic goitre, theories have been easier born than facts.

Thus Tinker (*American Journal of Medical Sciences,* August, 1907) in a semi-serious vein, states that, "One observer insists upon the importance of directing treatment to the circulatory organs, or perhaps to the heart alone; another to the sympathetic nervous system, or to some other part of the general nervous system; another to the intestinal tract; another to the thyroid glands themselves; another uses strong electrical currents and another uses weak ones. Serum has been prepared from pigs and calves whose thyroids were previously removed, and milk of thyroid-ectomized she-goats has been employed, the blood of patients suffering from myxedema has been injected; guinea pigs, rabbits, roosters and geese have been experimented on, with more or less enthusiastic reports of results obtained. While the internists have been treating almost every organ in the body—from the intestinal canal to the thyroid itself—with all kinds of drugs, serums and extracts made from animals and men, dead and alive, applied locally or taken internally, a few surgeons have been excising part of the thyroid gland itself with brilliant results, etc., etc."

Such an arraignment of all non-operative treatment of Graves' is similar to Mark Twain's "premature obituary notice, which, on hearing of it, he declared to be 'grossly exaggerated.'" It suggests, however, the questions, "Is there any medical treatment?" "When shall we adopt it?" and "What shall we expect from it?"

It should be stated from the outset that the percentage of cures is much smaller by medical than by surgical treatment. It does not follow, however, that surgery is always indicated in either simple or exophthalmic goitre.

It should be remembered that in a large majority of cases the tendency of Graves' disease is toward recovery; that in many instances the disease disappears without treatment; and that medical measures, when properly applied, relieve some of the most distressing symptoms, at a time when these offer contra-indication to operation, to such an extent that surgical treatment may be safely undergone, which, in itself, proves that medical measures, when properly applied, are far from being void of beneficial results.

It will be impossible, in discussing the medical treatment of this disease, to mention more than the therapeutic principles which clinical experience have proven most beneficial. The general hygienic, dietetic, medicinal, electricity and the use of sera should be discussed.

One of the most important therapeutic indications in the treatment of Graves' disease is rest; rest, physical and mental. The dosage should be modified to suit each individual case. In one instance, the patient should have the absolute rest-cure; in another case, two or three hours' rest in the middle of the day, with long sleeping-hours at night, will suffice. The instance is rare in which improvement does not follow the proper application of this therapeutic measure, as is evidenced by lowering of the pulse-rate and the reduction of many of the nervous manifestations of the disease. Only recently, in exophthalmic goitre, tachycardia of 149 was reduced to 95 within five or six weeks by physical rest, in conjunction with the general hygienic management of the case.

Balneological.—In regard to balneological therapy, one can not generalize, some cases doing better at the seashore, others at mountain ranges at moderate altitudes.

Dietetic.—The diet in exophthalmic goitre is very important, and should be governed by the following two principles: First, very large amounts of nitrogen are required to maintain an equilibrium during some stages of the disease, so that from two to three times the normal number of calories per day is demanded. Second, experience shows that intestinal toxemias play a very prominent role in aggravating the general toxemia resulting from perversions of the thyroid gland. It is for this reason that these patients do better on a vegetarian than on a heavy meat diet. In the average case, milk preparations best represent the staple article of diet. Careful attention should be given to the bowels, constipation being actively combated, and the other eliminatory functions of the body maintained.

Under rest, medicinal preparations as indicated and the maintenance of the nutrition, many incipient cases of Graves' disease are cured, and in the advanced cases the most aggravating symptoms relieved.

Drugs.—The use of drugs in Graves' disease is purely symptomatic. There is no specific. The various cardiac sedatives and tonics have been used with varying success, depending upon their selection in each individual case and the skill with which they are administered; some physicians getting better results with cardiac tonics, others with the belladonna preparations, and still others advising opium for the relief of the circulatory disturbances, etc. The same variances in opinions exist concerning the general medication, the use of arsenic, potassium iodide, phosphorus, the salycylates, and the medicinal agents directed toward the improvement of the nerve-muscular phenomena of the disease, etc. All have been tried, exploited, rejected, and tried again; none are specific.

Electro-therapy.—The faradic, galvanic, sinusoidal and static electrical currents probably belong to the realm of suggestive therapeutics, and the same confliction as to their clinical value exists as in the use of medicinal preparations, perhaps for the reason that, as Moebius says, in the management of these cases, anything is of value provided only the patient is led to think that it is.

X-Rays.—It was the hope that the use of Roentgen rays would produce a lesion of the glandular epithelium of the thyroid which would give rise to qualita-

tive or quantitative changes in the secretion of this gland which would modify the course of the disease, and many favorable reports have been published advocating its use. One of the most recent reports on this form of treatment which we have seen is that of Pfeifer, based upon a study of fifty-one cases, together with the histological findings and the results of experimental research. His conclusions were that the Roentgen treatment of exophthalmic goitre is ineffectual, as a rule, and should not supplant better tried methods.

Serum treatment.—Some eight or ten forms of sera and preparations from the thyroid have been used with greater or lesser success, but so far as we are aware, the end-results of such therapy have not done more than to suggest that these too must be relegated to the large class of therapeutic measures which, at the time of their introductions, were hailed as specific.

The last preparation of this category—the serum prepared by Rogers and Beebe—will, it is hoped, live up to the promises which its use thus far has given.

The method of its preparation is very briefly as follows: Two large goitres recently obtained from patients suffering from Graves' disease furnished the necessary material. These were ground to a pulp, and the nucleo proteids and globulins—including the thyroid globulin, which is supposed to be the active secretion of the thyroid gland—were precipitated. At different times the precipitate was injected into rabbits, and after five or six weeks the animals were bled to death from the carotid artery. Rogers treated ten cases with the serum thus obtained with extremely satisfactory results. Typical cases were cured. In a later paper he reports the results obtained in ninety cases. Twenty-five per cent were cured of all symptoms; 59 per cent were more or less improved; 12 per cent at that time were unimproved, and 4 per cent died.

Barker, in a symposium on Graves' disease held at the last meeting of the American Medical Association, closed his paper with these words:

"At the present time, there is fair prospect that the treatment of the disease may again be transferred from the surgeon to the physician. The remarkable results obtained in a number of cases by Rogers and Beebe through the use of their curative serum gives us good reason to hope that a method will ultimately be perfected which will permit the internist to accomplish with his needle that which he now asks the surgeon to do with a knife."

Until sufficient clinical proof of the value of this treatment is submitted, it would appear that it is the duty of the internist to give his patients who are not improving under medical treatment the advantage of the truly brilliant curative results obtained by surgery. Both surgeon and internist advise medicinal treatment; this failing, surgery is indicated. It is unfortunate that the majority of these cases have not reached the surgeons at a time when operation is attended with low mortality. Too often the fault lies with the internist that only the hopeless cases, and those that have grown steadily worse under prolonged medical treatment, are operated on at a time when the attending mortality must necessarily be high. The dictum to try medical treatment first, and if this fails turn the patient over to the surgeon, is too frequently productive of danger to the patient, for too great a delay subjects the patient to the same dangers of life-destroying sequalæ and complications in exophthalmic goitre as in diseases of the gall-bladder, peptic ulcer, and other conditions, the treatment of which is partly medical and partly surgical.

THE SURGICAL TREATMENT OF GOITRE.*

By WALLACE I. TERRY, M. D., San Francisco.

The surgical treatment of goitre did not assume any degree of importance in the United States until five years ago, when, owing largely to the communications of Theodor Kocher and his son, Albert, as to their results in the treatment of over two thousand cases, the medical profession of this country began to realize how much could be done surgically for the relief of many conditions dependent upon the thyroid gland. The previous mortality attending such operations, which had deterred physicians from recommending surgical relief, was shown to be referable in large measure to technical errors, but now that the surgeons have improved their methods they are attaining results comparable with those in countries where goitre is endemic. The Pacific Coast offers a fair field in this line of work, since goitre is somewhat common in a number of localities, as shown particularly by the investigations of Moffitt. [1]

Surgical treatment of a goitre may be demanded—1st, on account of its size; 2d, because of pressure symptoms affecting the trachea, larynx, esophagus or other important structures in the neck or upper portion of the thorax; 3d, when the growth is rapid, giving rise to the suspicion of malignancy; 4th, because of infection of the goitre; 5th, when Basedow symptoms are present.

Large-sized goitres may exist without producing any symptoms, but more often either by traction or pressure on the neighboring tissues they give rise to discomfort and cosmetically they are a disfigurement. One must also consider that malignant changes may easily occur in large goitres and render operation imperative.

Pressure symptoms are often noted in comparatively small goitres, especially where the tumor is at or near the median line. In some cases the gland masses grow directly backward and inward and press on the esophagus and recurrent laryngeal nerve, producing characteristic symptoms. Often, however, the trachea is flattened in one or another direction and respiration is interfered with. Difficulty in swallowing is quite commonly associated with dyspnea, for the esophageal walls are soft and yield to pressure transmitted through the harder trachea.

---

* To have been read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

Rapid growth of a goitre may be due to a simple hyperplasia, but often it is in the first indication of a carcinomatous or sarcomatous degeneration. It is advisable in such cases to administer iodides for ten days to two weeks and if the growth be benign a rapid subsidence will be noted. It is to be remembered, however, that iodides will sometimes produce Basedow-like symptoms in the presence of goitre such as loss of weight, palpitation, tremors, sweating and other nervous manifestations, hence the iodides should be discontinued when such symptoms appear.

Infection of a goitre is more apt to occur than infection of a normal thyroid, but nevertheless, in goitrous districts, it is an uncommon incident. Kocher, for instance, had but eight cases of strumitis in his last reported one thousand operative cases of goitre.[2] It is, however, probable that infections such as influenza and tonsillitis have some casual relationship with the growth of many goitres without leading to suppuration. A history of some such general or local infection immediately preceding the development of a goitre is obtainable in many cases.

Basedow's or Graves' disease is now recognized by the great majority of observers as being dependent upon the thyroid gland. The pathological researches of McCallum[3] and others have shown a marked increase of the active epithelium lining the acini, while many clinical reports have demonstrated that removal of the thyroid is followed by a cure or marked improvement in the great majority of Basedow cases. Moreover Kocher[2] states that he has never seen a Basedow case without enlargement of the thyroid.

The distinction is made by many of primary and secondary forms of exophthalmic goitre, the primary being those in which the development of Basedow symptoms is coincident with the growth of the goitre, while in the secondary form Basedow symptoms are engrafting upon an existing goitre. Personally, I can not see much reason for this distinction, for the following reasons: 1st, while the goitres may differ pathologically in some respects, so far as areas of highly active epithelial cells are concerned they are alike; 2d, from a symptomatic and therapeutic standpoint they are alike; 3d, we are dependent for our classification of the two forms largely upon the patient's previous history, and experience has taught us that such histories can not always be relied upon, especially when it comes to the observation of deeply situated masses in the neck. Many patients with marked Basedow's disease do not know that they have any unusual neck condition until it is brought to their attention by the physician, and to designate such cases with only slight or moderate enlargement of the thyroid as primary is not, to my mind, necessarily justified by the facts.

Operative treatment of exophthalmic goitre is indicated when after rational internal medication for a period not longer than three months the patient is not materially improved or cured. The statistics of Albert Kocher[4] showing that out of 254 cases 83 per cent were cured by operation and but 2 per cent died, is good evidence of the value of such measures, especially when contrasted with the poorer results following medical treatment. Barker[5], of Johns Hopkins, goes so far as to say that "In the present state of knowledge and practice, therefore, once a positive diagnosis of exophthalmic goitre has been made, it is, in my opinion, the physician's duty and privilege to recommend operation early." There is no doubt in my mind that the percentage of cures will be measurably increased when physicians adopt Barker's suggestion and the fatalities will be reduced to a minimum.

We come to the various operative procedures which may be employed in dealing with goitres. They are excision, enucleation, resection, exenteration of goitres, ligation of the thyroid arteries, division of the isthmus, and resection of the sympathetic ganglia. By far the most important procedure is excision. It is applicable to the majority of goitres and gives better results. The technic of this operation has been elaborated and described so carefully by Kocher that it need not be given in this brief paper.

The method of enucleation as devised by Porta and Socin seems to be in vogue in France. It contemplates the removal of nodes and masses of thyroid tissue from within without disturbing the posterior portions of the capsule. In selected cases it is of considerable value, but to make it a routine practice will lead to many disasters and fail to effect a cure in many cases. I have analyzed the cases reported by Delore and Chalier.[6] They report fifty goitres treated by intraglandular enucleation. Of these, one patient died—several severe hemorrhages were met with—tampons were used rather frequently—the recurrent laryngeal nerve was caught in one case and the healing was slower as a rule than with excisions. Shepherd[7] also did a number of intraglandular enucleations but abandoned the method after having two severe post-operative hemorrhages.

Resection as proposed by Mikulicz is also of value in selected cases, especially where after the removal of one lobe it is desired to remove a portion of the oter. By crushing with suitable forceps along the proposed line of division, the gland substance can be reduced to a ribbon of tissue which is easily ligated, and the stump left will not be so apt to bleed nor exude colloid material.

Exenteration is practically a form of enucleation, and is employed in the presence of large masses of broken-down gland tissue.

Ligation of some of the thyroid arteries, as first advocated by Wolfler, is employed to-day more as a preparatory measure for a more radical procedure than for its curative value. The superior thyroids being easier of access than the inferior are usually selected. The goitre undergoes considerable atrophy and many of the toxic symptoms in Basedow's disease are abated, temporarily at least. This procedure is frequently used by Kocher in profound Basedow cases and later followed by an excision.

Division of the thyroid isthmus was first advised, I believe, by Horsley for the cure of Basedow's disease, but the results do not seem to have justified

the idea that sufficient atrophy of the lobes would ensue to effect a cure.

Excision of the cervical sympathetic ganglia for the treatment of Basedow's disease, as first proposed by Edwards and later carried out by Jaboulay and Jonnesco, has been attended by such poor results that it is, for the preesnt at least, an operation not to be considered.

There are a few dangers connected with goitre operations which should be mentioned. Excision of too much of the thyroid will lead to operative myxedema—cachexia thyreopriva. The estimation of just how much to leave is at times a difficult matter, especially when both lobes are diseased, but should too little functionating gland be left the mistake can be corrected by the administration of thyroid extract or the implantation of thyroid tissue in the spleen, as has been successfully done by Payr [8] in a case of cretinism. More often, operators are apt to remove too little of the gland in Basedow's disease and the symptoms are not entirely abated. A second operation should be done in such cases.

Another danger to which attention has recently been strongly drawn by Halsted [9] is the removal of the parathyroid glands or their destruction during operations on the thyroid. Such an accident may be followed by tetany. The proper course to pursue in such cases is to administer parathyroid glands in some form—preferably the fresh parathyroids of beeves—and later, if possible, to implant one or more glands in the spleen. The parathyroids being small and rather irregularly located behind the thyroid are not easy to detect, and the safest plan to avoid them is to ligate the thyroid vessels as close to the gland as possible or to leave a portion of the posterior capsule, as advocated by Chas. Mayo.[10]

The danger of injury to the recurrent laryngeal nerve is mentioned in almost every surgical paper on goitre, but in this case repetition will do no harm, because its division leads to paralysis of the vocal cords and frequently to inhalation pneumonia. There are a few reports of successful suture of the nerve, but as a rule the damage is irreparable.

The presence of a so-called goitre-heart is in many cases a contraindication to a strumectomy. Thus dilation of one or more of the heart chambers, muscular and valvular changes, tachycardia and irregularity may be due to goitres, either from the dyspnea or pressure on the blood vessels produced by them, or from the systematic effects—the thyreotoxic effects, as observed especially in Basedow cases. Proper medical treatment will in most instances restore these patients to a condition in which operation may be done with comparative safety, but a careful estimate of the soundness of heart and lungs should first be made by some one competent to judge.

The choice of an anesthetic is an unsettled question in America to-day. The majority of surgeons in this country are inclined to use ether, but such is not the practice of continental surgeons and especially Kocher, who, with hi sexperience in over three thousand goitre operations, is entitled to speak with the greatest authority. His preference is for local anesthesia and only occasionally does he find it necessary to employ a general anesthetic. The only real argument in favor of general anesthesia is the abolition of pain, whereas there are a number of serious objections to its use. The depressing action of an anesthetic on a weakened heart—and practically all the Basedow as well as many simple goitre cases have some heart changes; the lowering of the blood pressure; the turgescence of the blood vessels in the neck; the danger of unwittingly injuring the recurrent laryngeal nerve; and the post-operative vomiting leading to hemorrhage and soiling of the wound are sufficient, in my opinion, to rule out general anesthesia for the majority of these operations. I have found it necessary to supplement local anesthesia with ether in one case where dense adhesions were encountered, but have not used it otherwise except in malignant cases.

The mortality of operations, other than strumectomy, in cases of Basedow's disease was investigated by Hirst [11], who concluded that the existence of exophthalmic goitre added about 15 per cent to the mortality of any operation performed upon the patient. Unless some other operation is imperative, it follows that the goitre should first be looked after.

My personal experience in goitre operations embraces but eighteen cases. Of these two were malignant, secondary to cancer of the larynx; three were simple goitres; three were early Basedow cases; and in ten cases Basedow symptoms were marked. The immediate mortality was nil, and I have been able to trace sixteen out of the eighteen patients, with the following results: The two malignant cases proved fatal from recurrences after intervals of four years and five months respectively; the three patients with simple goitre are cured; two of the three beginning Basedow cases were traced and were well. The after histories of nine out of the ten marked Basedow cases were obtained and showed that six are practically well and three much improved.

REFERENCES.

1 Moffitt (H. C.).—Affections of the Thyroid in California. Jour. Am. Med. Assoc. Sept. 10, 1905—837.

2 Kocher.—Ueber em drittes Tausend Kopfextirpationen. Archiv f. klin. Chirurgie—1906—Bd. 79—786.

3 McCallum.—The Pathology of Exophthalmic Goitre. Section on Surgery & Anat., A. M. A.—1907—333.

4 Kocher, A.—The Surgical Treatment of Exophthalmic Goitre. Journ. Am. Med. Assoc. Oct. 12, 1907—1240.

5 Barker.—The Diagnosis of Exophthalmic Goitre. Jour. Am. Med. Assoc. Oct. 12, 1907—1235.

6 Delore and Chalier.—Contribution a la Chirurgie Thyroidienne. Rev. d. Chir. 1907—XXXVI—487.

7 Shepherd.—Some Experiences in the Operation of Thyriodectomy, Partial and Complete. Surgery, Gynecology and Obstetrics. 1906—III—272.

8 Payr.—Transplantation von Schilddrusengewebe in die Milz. Arch. f. klin. Chirurgie. 1906—LXXX—730.

9 Halsted.—Hypoparathyreosis, Status Parathyreoprivus, and Transplantation of the Parathyroid Glands. Am. Jour. Med. Soc. 1907—CXXXIV—1.

10 Mayo (C. H.).—Treatment of the Posterior Capsule of the Gland in Thyriodectomy. Surg., Gyn., & Obs. 1907—V—26.

11 Hirst.—The Mortality of Operations, Other Than Strumectomy, in Cases of Exophthalmic Goitre, with Special Reference to Gynecological Operations. Surg., Gyn. & Obs. 1905—1—98.

THE RELATION OF THE THYROID TO MENTAL DISEASE.*

By JOHN W. ROBERTSON, M. D., Livermore.

The thyroid gland is a vital organ directly connected with that physiological process necessary to life. When disturbed in function, either by excessive secretion or a diminution of the glandular activity, it powerfully affects the body. The physiology of the gland has not been determined, further than that its total extirpation necessarily results in death. The partiological condition based on the disturbance of function is equally ill-understood and, necessarily, empiricism takes the place of scientific deductions.

We know that an increase of gland tissue, with probably increased function, results in rapidity of the heart action, and assume that the increase of glandular flow directly stimulates the sympathetic nerve. We know that there is an increase of metabolism with malaise and rapid growth of besh. Whether this be due to the saturation of the body with globin low in iodin, as has been claimed, or to metabolic changes due to unknown nervous origin, has not been determined. The symptoms are so various and relate, not only to the circulatory apparatus but involve the muscular, respiratory, digestive, urogenital and, especially, the nervous systems, that no definite clinical picture can be drawn beyond the three cardinal symptoms of enlarged gland, rapid heart action and protruding eye. This disturbance may be due either to a change in the gland itself or to some degenerative change in the sympathetic, producing a stimulation of the vasomotor dilators, yet no postmortem change characteristic of a diseased sympathetic has been found. We know that the disease may so disturb the vasomotor nervous system as to produce a functional disturbance and occasionally an absolute pathological neurosis.

On the other hand, a lack of thyroid activity, either because of gland atrophy or from an operation involving excessive destruction of the body, results in conditions equally injurious to health. We know further that the removal of a part of the thyroid body reducing it, and consequently its secretion, to normal, restores the physical health; and that, where there is a deficiency of secretion, either the transplantation of the thyroid into the peritoneal cavity, or the internal administration of thyroid extract, will restore bodily vigor, thus showing a direct and absolute relation between the gland and the various diseases we believe to be connected with its disturbance of function.

Generally speaking, it may be said that in all cases of exophthalmic goitre, the symptoms point either to a direct neurosis or a condition which has the sympathetic nervous system as a basis. The disease occurs in family groups, though but rarely is it directly hereditary. Associated in the same family we find hysteria, neurasthenia, epilepsy and the other neuroses, showing its distinctly nervous origin, and, very frequently, it is secondary to a neurasthenia and is precipitated by a mental shock. In the early stages of the disease the pulse rate is greatly influenced by emotional excitement. We can only explain this frequency of action by some disturbance of the sympathetic which may be partly due to an irritation; and the term thyro-intoxication is a satisfying word, if not a scientific explanation. The exophthalmos has been variously but never satisfactorily explained, though undoubtedly connected with the change in circulation.

The tremor, so often a symptom of this disease, is increased by effort and emotional excitement. Exophthalmic goitre is often accompanied, in addition to this tremor, by choreic movements, epileptic seizures, vertigo, headache and true megeim, thus showing the profound neurotic basis.

Next in frequency to the three cardinal symptoms, we find disturbances of metabolism; there is general malaise and such digestive disturbances, with rapid loss of flesh, as to strongly remind us of the gastro-intestinal condition preceding and complicating the early stages of acute mania and melancholia and which as a basis have a profound disturbance of the sympathetic nervous system. However, the theory has been strongly advanced, that this loss of flesh is due solely to the over-activity of the thyroid gland, which, in addition to its recognized function of neutralizing poisonous products of metabolism, has the direct power of greatly increasing oxidization. We also know experimentally, that thyroid extract, administered internally, rapidly reduces the flesh and that it also produces such physical prostration and muscular weakness as to be regarded as a remedy more dangerous than the disease.

While it would be entirely wrong to assert that mental conditions complicate all cases of exophthalmic goitre, it is certain that in many there is a change of mentality. They are more irritable, are more easily excited and lose brain power, becoming forgetful and easily confused. There is a change in their facial appearance not alone due to the enlarging of the palpebral fissure, nervous expectancy and excitability taking the place of the ordinary repose of manner. There may develop a more profound change resulting in a real mental condition, characterized by either excitement or depression; often these two conditions alternate. In a very few cases a still more serious disturbance develops—usually a marked melancholia with visual hallucinations, less often auditory, with the slow development of delusions of persecution. In my experience, cases developing into an absolute mental disease is not common, though I have met with several suffering from an acute delirium. Undoubtedly the connections between this mental disturbance and exophthalmos is to be explained by the changed brain circulation. While it is generally true that anything that weakens or disturbs the general health of a neurotic patient may precipitate an attack of insanity, we know that in both acute mania and melancholia the pathologic condition is one of disturbed brain circulation, and I can imagine nothing more

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

liable to bring this on than the tachycardia, no matter how produced.

But to the general physician, the remarkable resemblance and relationship hysteria and neurasthenia bear to the early stages of exophthalmos are of vital interest and, so far as I know, have not been dwelt upon—and by many writers hardly more than mentioned. Usually preceding the disease and before any of the pathologic symptoms develop, there is a condition of neurasthenia or its cogener, hysteria, and even after the development of the exophthalmic goitre there is much in common between it and neurasthenia. We do not know what neurasthenia is, further than that it is a convenient term under which to class a large group of nervous patients, having a disturbance of the sympathetic nervous system in common; for instance, stomach neuroses, heart palpitation, flushing of the face, skin paresthesias; in other disturbances of the various nerves presiding over the stomach, heart, lungs and intestines, muscular weakness and morbid fears with introspective obsessions, sweating of the hands and feet and that general tired feeling have much in common with exophthalmic goitre. We have many cases where there is rapid heart action, where our patient is constantly feeling his pulse and is overcome with the obsession of fear that he is dying; or where there is perspiration suddenly breaking out over the extremities, depression which at times becomes a real melancholia. With rest, nourishing diet, faith in their physician and a proper environment, full recovery will come, yet no one can so prognose these cases as to entirely differentiate the possible full development of Graves' disease. In this we have, or may have, the depression, inability to concentrate the mind, the various obsessions of fear, the tired feeling and muscular weakness, stomach and intestinal disturbances, palpitation and other evidences of sympathetic irritation, making altogether a clinical picture that, in its early stages, can not be differentiated from neurasthenia. The one essential dissimilarity is the great loss of flesh in exophthalmic goitre, but this rarely comes until other symptoms have clearly established the differential diagnosis.

As the symptoms of exophthalmos differ so greatly, the treatment must be adapted to the individual condition. All cases require rest, and food of such a character that it nourishes and does not poison. When there is excessive activity of the gland, there is an increase both in the assimilation of albumen and the combustion of fat. Should the patient take only the normal amount of food, loss of body weight occurs. For this reason over-nutrition is necessary and it is stated that 18 to 20 per cent above the amount formerly used is necessary to maintain the ordinary weight. It often happens when the gland is actively functionizing, that it is not possible even by over-feeding to increase or even hold the normal weight. In all cases the modified Weir-Mitchell rest cure is to be followed. By this I mean that over-feeding, massage and electric treatments are excellent; but absolute rest in bed is not necessary and is often injurious. The great danger is from cardiac weakness: excessive fat or fat too rapidly put on, is to be avoided. At first it is desirable only to hold normal weight, later one pound per week can be safely added. Other means, supposed to act directly on the disease is a stabile galvanization of the sympathetic, cold water affusions, an ice-bag over the heart, with general hydropathic treatment has been recommended. No drug is of any value, many are distinctly bad. Bromide of potash and sodium phosphate may be used symptomatically. It must be remembered that exophthalmic goitre is not necessarily fatal, but often recovers spontaneously. For this reason we attempt to aid nature and assist where nature seems unable; rest and good nursing are all that can be done, apart from surgical operations which are often overdone.

DISCUSSION ON THE SYMPOSIUM ON THYROID GLAND.

Dr. Stanley Stillman, San Francisco: It was just about twenty-five minutes ago that President Evans asked me to give the surgical treatment of goitre before the State Society, and while it may have seemed to him a flattering proposition to me, I consider that he must have thought me a damn fool. If there is any subject upon which my mind is not at all clear, it is the subject of surgical treatment of goitre. In general, from my own experience, the first consideration that I give a case of goitre is whether it is of the cystic variety, which is certainly a surgical affair, and only a surgical affair. There is no medical treatment for cystic goitre. In the parenchymatous forms there is the greatest uncertainty. My own plan is generally to submit these cases to medical treatment, or to co-operate with the medical man in the treatment of them. There are many of these cases that do well. The goitre, while it does not disappear, never seems to affect the patient so long as the hpyerthyroidism is early combated. In other cases the treatment does not benefit, and in those cases I have removed part of the thyroid. The teaching of Kocher is to remove half of the thyroid, at first going through the isthmus, removing half and watching the results of that procedure. If the case requires further surgical work, then ligation of the superior and inferior thyroid arteries of the remaining half is done, which generally proves sufficient. There are cases in this category lying along the border line of exophthalmic goitres. That is, they have the tremor, tachycardia, sleeplessness and general nervous symptoms, never going to the extreme, which you find in the exophthalmic goitre, and which are often very well controlled by medical means. They are the class of cases that give us the greatest apprehension and anxiety as to what procedure to follow. It is in the pure exophthalmic goitres that the question of medical and surgical treatment is difficult. There are those who claim that there is no surgical treatment for exophthalmic goitres. I am not one of those. I have seen such startling results from extirpation of the thyroid in these cases and such distressing results from continued medical treatment, that I am coming to the opinion that exophthalmic goitre is properly and purely a surgical affection. As to the technic, it is too well-known for me to take up your time in that way. I would only say that I am accustomed to operate under ether anesthetic. I have never found it a necessity, nor have ever done one of these operations under cocain. I have watched other men do it and am less disposed to do it in that way. I have seen no untoward results from ether in these cases and I have seen a patient die without it under cocain anesthetic. That subject has been pretty well worked out by the Mayo brothers, and their experience is

such as to strengthen my belief in the desirability of continuing to operate under the general anesthesia. The preservation of course, of the parathyroids, just now is a very acute stage before us. Indeed, the whole subject of goitre is in a state of very active ebullition at present, and I do not know why this should be in California, either, because we certainly do not see as many cases as they do in other parts of the world, and we cannot speak from the experience of other sections. One or two points which I have been accustomed to observe in exophthalmic and parenchymatous goitre is the avoidance of any rough handling of the gland in its removal. I have seen in a roughly handled case, done with blunt dissection, tearing and stretching with the fingers and the use of force, sudden hyperthroidism following the operation and resulting fatally. The filling up of the system with the secretion of the thyroid gland as expressed of its juice during the rough handling, is something to be avoided. The preservation of the parathroids is of the highest importance and it seems to be unquestionably true that the whole of the thyroid may be removed so long as you do not disturb the nutrition of the parathyroids. The identification of these is not at all an easy thing, and it is not comforting to find them oftentimes after you have removed the thyroids, on its surface. The section through the posterior surface of the thyroid, leaving a portion of the cut surface of the thyroid, removing it and not ligating, but making a section through the posterior surface, ligating the vessels as you come to them, seems to be the safest way to avoid their removal, as well as the interference with the recurrent laryngeal.

Dr. W. W. Beckett, Los Angeles: The subject of thyroid glands and parathyroid glands has occupied the attention of the surgeon for the last year or two. There is so much that we do not know about them and so little that we do know, that it makes an interesting field for the surgeon. The parathyroids, those little life-saving glandules, have occupied the attention of the anatomists, the internist and the surgeon especially. I think one reason why they are so interesting is on account of the difficulty in finding them. We are told that sometimes the inferior one is situated down in the mediastinum, where the globules of fat are mistaken for it. It has been my plan in diseases of the thyroid, to subject them to medical treatment as long as the medical treatment seems to do them any good. Many of these cases, of course, are amenable to medical treatment, but as Dr. Stillman has said, of course the cystic variety is essentially surgical. A small cyst of the thyroid may do no harm. I want to call your attention to one particular condition in dealing with these enlarged thyroids, and that is the condition of menorrhagia in girls. I have had several cases where curettement and other treatment has had no effect on the patient, while thyroid extract in the majority of cases will cure them. There is a relation between the thyroid and the pelvic organs which is not yet fully understood. The parenchymatous variety of the thyroid many times causes no symptoms at all until quite large. Of course, where they are causing symptoms and medical treatment has produced no amelioration of the symptoms, I should remove a portion of the gland at least. I believe we are going, in the future, to remove more of the exophthalmic variety than in the past. They are going to be made well by surgical interference. Many are not amenable to treatment and receive no benefit at all by medical treatment, and cure may be had by the surgical treatment. I use ether anesthesia in all of my cases except the spinal anesthesia in some selected cases. I begin with a whiff of chloroform and use the ether by the drop method. I have never tried removing these tumors by local anesthetic. It seems to me that if I had to undergo the operation myself, I should prefer taking ether. The ligation of these inferior and superior thyroid arteries, I think, should be very carefully done. If you can do it within the capsule you are pretty safe, but without ligating them within the capsule you may cut off the supply of the parathyroids and cause distressing results. The method of Mayo, to keep within the capsule, is undoubtedly the safest operation. Of course the tearing of the tissue and the rough handling should be avoided. Dr. Welch calls attention to the application of cold following the operation, and he believes that great benefit has been derived in that way.

Dr. D'Arcy Power, San Francisco: The great mass of cases are treated internally, and yet I doubt whether there is any form of disease in which some rational consideration of the etiology ought to be taken more into account than these cases. To begin with we ought to recognize that they are divisible into two groups, a group in which the origin of the excess thyroid secretion is functional and that in which it is organic, and that makes the differentiation between those cases which are amenable to treatment and those which are not, which must go to the surgeon. There can be no doubt whatever that the thyroidism being to a large extent an excess of stimulation, that stimulation shall fall upon the thyroid gland and bring about this secretion. The cause of this should be ascertained. Stimulation is often reflex in its character, and often of pelvic origin, and there we have the first clew to these cases. Secondly, a number of them, especially those commencing in youth, are undoubtedly due to organic change in the tissue and thyroid gland. These cannot be expected to be treated medically. That distinction ought to be drawn in the beginning of these cases and we should then get better results. So far as the functional cases are concerned, we have to remember that where they turn out badly, it is largely by the symptomset; Im szaagodufthtwis largely by reason of the symptoms and these symptoms are sometimes in our control. Undoubtedly the question of feeding is one of the most important factors here, and the supply of nutriment to make up the enormous loss should occupy our first attention. Secondly, a number of these cases die purely from relative insufficiency of the heart valves, and while it is true that the ordinary heart tonics do not have their usual effect in thyroidism, they do have an effect; but it must be remembered that you need to increase the dose of the heart tonics to a great extent. I remember a case in Portland, which was supposed to be moribund, in which the heart tonics had been said to have been tried. As a purely last resort in that case, I tried large dosage of tincture of digitalis and within three weeks of the commencement of the case the man was walking about again. I do not know what became of him. These heart cases can be controlled by larger doses than normally used. In so far as the sympathetic system is concerned, we should use, in all functional cases, rest and nerve sedatives and bromides, in doses much larger than ordinary.

Dr. Rose T. Bullard, Los Angeles: I have used cocain anesthesia in some twenty or thirty cases of thyroid and have found it very satisfactory. I agree that there should be very little handling of the thyroid. I have found that in about a third of the cases there is an intense difficulty in breathing, the patient becoming very blue merely from pulling on the recurrent laryngeal. I have always insisted that there should be a large amount of oxygen on hand and have had two cases saved by oxygen. The blueness does not come on in the ordinary way. One or two cases I have seen are interesting because the removal of the thyroid seemed to remove the secondary disease, that is, the nephritis. In one of the worst cases of thyroid I have ever seen, I asked the hospital staff if they had examined the urine, and found that they had not. The urine was drawn and

I took the specimen to my office and found out that it was a case of nephritis. I expected an exacerbation and that the patient would die of acute Bright's, but the nephritis entirely cleared up. I have also noticed that enlargement of the gland is more common in cases of menorrhagia and pelvic trouble. In the medical treatment of the trouble you are all aware that the symptoms increase during the menstrual time.

Dr. Chas. G. Levison, San Francisco: There are one or two points with regard to the treatment of goitre which have not been sufficiently emphasized. The first point in the medical treatment of exophthalmic goitre as a preliminary to surgical procedure. Many cases are referred to the surgeon for operation which show all the symptoms of "Grave's disease," and it is not easy for him to refrain from operating upon this most interesting condition, and he frequently loses sight of the fact that medical treatment should be instituted. These cases can be put to bed, nerve sedatives and phosphate of soda given, and it is surprising how many cases of exophthalmic goitre will pass from under the hands of the surgeon. This has been my experience on numerous occasions. The preliminary ligation of the thyroid artery is an important consideration and an individual can be brought under the knife in a fairly satisfactory condition if this procedure is carried out. Kocher advises ligation of the two superior and one of the inferior thyroid arteries, but every now and then a case of tetany will develop as a result of this operation. This is due to the fact that an occasional patient will have two parathyroids occupying the lower pole of the thyroid. These are supplied by a direct branch from the inferior thyroid artery. On the corresponding side the parathyroids are absent. In cases of this type if the inferior thyroid artery supplying these parathyroids is ligated the secretion is cut off and tetany will develop, so that to-day it is recognized as a procedure associated with some danger. In operating in this field a complete hemostasis must be observed. Parathyroids can be found if the operation is done bloodlessly by using fine-pointed hemostats and introducing them into the thyroid substance at the points where the vessels emerge, as Halsted advocates.

Dr. E. C. Sewall, San Francisco: I wish to call attention to the value of the examination of the trachea in such cases of pressure, by means of the Killian tube or bronchoscope. It is possible by means of direct or indirect bronchoscopy to get a very good idea of the compression present. The procedure is comparatively simple and of great value. The tube can be passed through a cocainized larynx and the amount of compression very well and very easily settled.

Dr. F. Dudley Tait, San Francisco: It may be of historical interest to note that the disease under discussion was described as early as 1825 by Paré (?) and in 1837 by Graves and in 1849 by Basdow. I think it is a mistake that we make, and the writers make, in calling the disease in question by the name of a symptom. A more accurate way of proceeding would be to refer to the gland a term for instance, which you find abroad, of hyperthyroidism, a term comprising all the curable early forms and covering also the grave forms. It seems to me that a diversity of opinion among medical men regarding the treatment of thyroidism is entirely due to the ignorance of the pathology of the organ in man. We know nothing of it and it seems to me that on all sides we are treating symptoms. There cannot be a sound therapy without a pathological basis. No attempt has been made to classify the lesions. Wilson of Rochester is attempting it and, as you know, he has an enormous amount of pathological material from the Mayos. In looking over his thyroidectomy specimens one feature struck him and has some bearing upon thyroid treatment, and that was the fact that in all the grave cases of hyperthyroidism there was a marked cytolysis. There is a direct relationship between the extent of the condition and the gravity of the clinical symptoms. I think you could conclude from that that we should be extremely cautious in the use of the serum. As to surgery, we should say a word to the medical men that they should not exact too much of surgery. When a patient comes to the surgeon his work can be only palliative. I would ask Dr. Stillman whether it has been his experience that the exophthalmic symptoms have been improved by his partial parathyroidectomys. From what I have seen in my limited experience, I have very seldom noted any improvement of that particular symptom. The neurotic and vascular symptoms—yes.

Dr. E. Schmoll, San Francisco: The question of the treatment has been particularly discussed from the surgical standpoint. I would like to emphasize the standpoint of the physician when called upon to give his opinion as to whether surgical procedure should be followed in the treatment of goitre or whether internal treatment will be able to control the symptoms. The first question to consider is whether we have to deal with a case of goitre producing only local symptoms or whether internal secretion of the thyroid is disturbed and produces general symptoms of hyper- or hypo-thyroidism. In the cases where the goitre has remained a purely local disease without any symptoms of a general disease of the boyd I think we are all in favor of an operation in cases of cystic goitre, as no medical treatment will give any results. Operation should be performed at once in cases where the cyst compresses the trachea and produces a softening of the cartilage of the trachea. In such cases I have seen death occur from sudden obstruction and collapse of the structure of the trachea. In cases of parenchymatous goitre without general symptoms an attempt with iodine medication ought to be made. If there is no suspicion of hyperthroidism external iodine medication ought to be tried without any internal treatment. In other cases sodium or potassium iodine may be given internally, but in small doses not exceeding fifteen grains per day. Such cases have to be followed very closely, as I have seen symptoms of hyperthyroidism originate under internal iodine medication. In the cases of goitre with general symptoms we have to distinguish at least four categories. First, the goitre heart. The particular symptoms of this affection are a constant tachycardia wherein between ninety and one hundred and twenty signs of hyperthyroidism may be seen, a general nervousness and insomnia, slight tremor and a tendency to sweat. Local findings of the thyroid are usually very slight, very frequently they are completely overlooked. They consist in a general parenchymatous swelling, only very rarely developed to a degree where local symptoms of compression are produced. These cases ought to be treated medically, as under surgical treatment usually it does not yield very marked results and operation in these cases is usually as dangerous as in cases of exophthalmic goitre. Secondly, in cases of exophthalmic goitre operation is indicated where medical treatment has failed. Failure of medical treatment is indicated if the patient keeps on losing weight and if the tachycardia does not retrocede. The majority of cases of exophthalmic goitre, I think, are amenable to medical treatment. (I think very much better results can be obtained if two points are kept in mind which are paramount as to the result to be obtained in such cases. First, complete rest, bodily as well as mentally. Secondly, the dietetic treatment excluding meat in any form and putting the patient on a lacte-vegetarian diet.

These points are carried through when tremor and tachycardia diminish and improvement begins to set in. Medication from which I have obtained marked results are the calcium salts, following the suggestive investigations of Professor Loeb.) Thirdly, cases of exophthalmic goitre with beginning symptoms of hypothyroidism, as loss of heart function, of superclavicular fat pads, loss of lateral part of the eyebrows, formation of myxedematous patches of the skin, ought to be excluded from medical treatment. Here an alternation between feeding of thyroid and treatment directed against the symptoms of hypothyroidism ought to be instituted. In cases of creinism, surgical treatment is only indicated if the compression of the trachea should produce any alarming symptoms. eBfore finishing I want to attract your attention to the fact that we cannot take the symptoms of hyper- and hypo-thyroidism as an expression of isolaed disturbance of the thyroid gland. I would like to point to the fact that in almost every case of exophthalmic goitre which has come to autopsy permanent thymus has been found. And it may very well be that a primary disturbance of metabolism may have begun in the thymus which the thyroid has to neutralize. Another interesting relation exists between thyroid and adrenal. Where adrenal secretion raises the compression of the thyroid it seems to act as a depresser to blood pressure.

Dr. Geo. H. Hare, Fresno: I am much interested in the talk presented this morning and do not wish to undertake the discussion further than to add interest to it by referring to one case under my observation. It is a case of exophthalmic goitre of some two years' duration in which we have the typical symptoms of the exophthalmic hyperthroidism, tachycardia, nervous symptoms and disturbed sleep and the symptoms which usually accompany this condition. We have associated with this, and beginning about the same period, a condition of extreme hypertrophy, which apparently is the cause of elephantiasis from the waist line down. I wish to call attention to this case in order to emphasize the fact that we have in this a complication of the conditions which we are discussing this morning, offering a fertile field for further research. This case is of a young person of about twenty and the patient was in perfect health up to two years ago, except for a slight nervous disturbance, but during the last six months she has been suffering from a complete menorrhagia.

Dr. T. W. Huntington, San Francisco: With a fairly broad experience in the operative treatment of the condition under discussion, and with a wide faith in the therapy which has served for me to bring about excellent results, I wish to add just a word with regard to one or two points which have not been emphasized. I want to speak of the surgical treatment of the so-called bad, late, cases. The cases which my own personal friends tell me should never be touched with the knife, that we have spent our time watching the patients, and the time is passed for surgical treatment. My comment upon this is two-fold. First, why should the patient be carried on to this point? Why should this individual case be carried on to the dead line because at that point medical treatment does not come in? Cannot anything be done surgically for this case? I do not care to report a case, but I will give you the picture of such a case as I mean. It is a picture that can be verified and will come to the minds of some of you. A working woman, obliged to earn her bread, who has had this disease from three to five years, who has gone down the line with all the approved methods of treatment and has gradually degenerated—has become a victim to so-called thyroidism with the heart degenerated, with eyes prominent, with inability to pick up anything from the floor because of the degeneration of other muscles—with a patient whose hair is dropping out, with peculiar condition of the skin. I have had just such a patient and to-day the patient is well and able to earn her living. She has come back to the normal state of affairs. The woman to-day can not be recognized as the same woman of six years ago. I have watched her very carefully and to-day she stands as a living example. With regard to the death rate in operative surgery, it is not large. It differs in different hands and will differ widely in different hands if we have correct reports, but a death rate of three per cent is not large and it is not in excess of what would be demonstrated in decent and skillful people. Eight per cent by the Mayo brothers was considered at one time as too large.

Dr. E. E. Kelley, San Francisco: I do not speak from a very large experience in dealing with these subjects, but I have had a few cases. In the first place it has been remarkable to me that the size of the gland and the hypertrophy have very little to do with the seriousness of the symptoms. That is characteristic of the ordinary goitre. A large goitre may give no symptoms of pressure. But another case with a cyst may give very distressing symptoms. I believe in these cases the best help is through the knife. I have observed in one or two cases of my own that after section of the gland, if there is any raw surface of the thyroid left, the tachycardia will be very much increased for two or three days. I have followed the advice of some one, who advises cauterizing the raw surfaces that are left so that the secretion of the gland itself would have as little access as possible to the system. As a result I believe that the tachycardia has been materially reduced. I think, also, that rough handling seems to throw into the circulation an amount of secretion that affects the general nervous system and it has a material effect upon the operation, and I believe that the advice given here is correct, that the gland should be handled very carefully. Yet the most important recommendation that I have found of benefit in the exsection of these glands has been to keep within the capsule and litigate your arteries as you meet them, so as not to allow your operating field to be flooded. I believe that in operating in this way the mortality can be reduced.

Dr. A. W. Morton, San Francisco: I have been very much interested in these papers on this subject, but I think the great question is that we do not know much about the pathology. The result is that it is difficult for the medical man and the surgical man to segregate the cases. I have felt for the last two years that surgery offered more than any other form of treatment until Beebe brought forth his serum. In the Beebe serum I think we have something that is going to offer much relief to these patients. Taking the cystic type of goitre, there can be but one method of dealing with them. The great trouble is the pressure. Surgery always relieves that. There is no difference of opinion regarding these cases. I have the specimen from one case which I have removed recently, which I will pass around, where the tumor was pressing on the trachea until the patient could breathe only with difficulty from the stricture of the trachea. As to the glandular type where there is hypersecretion, I think it is of much importance for the surgeon and for the medical man to be continually in consultation on the case. Before operating we should try the medical remedy as much as possible, and after we have failed, we must not wait until we get the picture described by Dr. Huntington. Surgery certainly gives a great deal of relief in these cases. As to the technic, the speakers have already mentioned the anesthetic. I am satisfied that the further away from an anesthetic you can stay the better. We only need to point to the remarkable results of Kocher—he uses the local anesthetic. But if you will use the medullary nar-

cosis, as I have tried, you will overcome the principal objection to the anesthetic. In working with the medullary narcosis, there is no danger of cutting the laryngeal nerve. You can talk to your patient while you work and can handle the laryngeal arteries, which is impossible under anesthetic. Another point is hemorrhage. Hemorrhage has been one of the dreadful things, especially in operating under anesthetic. There is a simple device suggested by Dowbin of New York that I have found of much importance. I never operate on a case about the neck without lowering the blood pressure. You simply apply a tourniquet around the limb so that it interferes with the return venous blood and allows the arteries to fill up in the extremities. In any bloody operations about the neck it diminishes the amount of hemorrhage to practically nil.

Dr. Stanley Stillman, San Francisco: I would take exception to Dr. Morton's experience in ether anesthesia. I have had no distressing experience and have never attempted to use local anesthetic because I think there is more danger from cocain in these cases where there is a bad heart action to begin with. The matter of hemorrhage also does not bother me. That is a matter of technic largely, and instead of the method of bandaging the limbs and holding back the circulation, that may be better managed by lowering the feet and raising the shoulders, and you can accomplish all that bandaging can do. That is a matter of routine in all cases of operation around the throat and neck.

"THE FALLACIOUSNESS IN DIAGNOSIS OF SO-CALLED PATHOGNOMIC SIGNS."

DR. C. M. COOPER, San Francisco.

Discussion of Dr. Cooper's paper, published in the May Journal:

Dr. E. Schmoll, San Francisco: I am quite sure to express the general feeling of those present, in thanking Dr. Cooper for the brilliant paper, full of suggestions, which he has just read. In connection with the ideas here brought out, I would like to sound a note of warning with regard to the new territory of diagnosis which has lately been opened in connection with the etiologic diagnosis of infectious diseases, especially typhoid fever. You may know that the Widal reaction, the culture of typhoid bacilli from the infected organism, has taken the first place lately in the diagnosis of typhoid fever. I do not think with full justification. First of all, we occasionally run across cases in which a Widal is present without the disease being typhoid fever. This can occur under different conditions, as for instance, if the patient has had typhoid fever previously. This can easily be proven in cases which have had a regular course of typhoid, and occasionally such cases occur such as the ambulatory cases, and the typhoid has been overlooked and in the history we do not get any indication of the previous infection of typhoid. I have had three such cases in which the Widal was pronounced. In one case the history of typhoid could be obtained, and in the other two there was no history. In another condition, the Widal may be present where an organism occurs with bacilli related to the typhoid organism. It has been known for a number of years that the Widal occurs in cases of jaundice with swelling of the liver and enlargement of the spleen. These cases are due to an infection with an organism related to the organism of typhoid belonging to the coli typhoid bacilli. In these cases the Widal has been considered a group reaction. A second etiologic source of error is the following: Typhoid fever is a clinical entity and not a histologic one. Not every case of clinical typhoid fever with pathologic lesions is due to infection with the typhoid bacilli. We have learned to distinguish a number of varieties, which are due to infection with the para-typhoid bacillus. Here the typhoid reaction may not occur. Then the presence of the typhoid bacilli in the organism does not necessarily lead to the clinical picture of typhoid fever. We have cases of infection with typhoid bacilli in the gall bladder in which no symptoms of typhoid occur. We know that persons harbor typhoid bacilli in the gall bladder for years and years. The typhoid bacilli may be excreted with the stools and isolated from the stools and still the case need not be a case of typhoid. A case has come under my notice in which the discovery of typhoid bacilli from the stools led to the diagnosis of typhoid fever, but the post-mortem proved the case to be a case of miliary tuberculosis with infection of the gall bladder—the infection had made its way from the gall duct into the stools.

Dr. Chas. Levison, San Francisco: With regard to the pathognomicity of certain signs, there is one point that I desire to bring out and to emphasize a protest against the unqualified acceptance of the value of the blood count in surgical diseases as far as the presence of pus is concerned. It is accepted more or less generally that the blood count is an absolute indication of the presence or absence of pus. On every hand, when one is in consultation, the first question asked is what the blood count has revealed, but, as a matter of fact, the average case reveals nothing. A professor in one of our local institutions, some three years ago, laid down the dictum that when the blood count showed 20,000 whites with the differential count of seventy-five or eighty per cent polynuclear leukocytes, that the abdomen should be opened; this, if observed, would be a most dangerous teaching. In conversation recently with Dr. Ochsner, of Chicago, in answer to a question from me as to the valuation he placed upon the blood count, he stated that the blood count is studiously taken in each patient, that it is filed away and after two years is taken out and studied. By this he meant that he attached no value to the blood count as an indicator of the presence of pus. I have noticed on various occasions that with eighty-two or three per cent polynuclear leukocytes with a leukocytosis of 25,000 or more, operation has been performed without the discovery of a trace of pus; and, on the other hand, I have found pus repeatedly where the blood count has been normal. The blood count should be accepted for what it is worth, but under ordinary circumstances should only be a factor in diagnosis and should not be accepted as an equivocal evidence of pus demanding operation. In my opinion, when leukopenia is present this sign is of the greatest value, naturally indicating low resistance and contra-indicating operation, for in those cases where leukopenia is present, if operation is performed, it is frequently followed by disastrous results. In opposition to the pathognomicity of signs is the pain of gastric ulcer, for it is well known that cases of gastric ulcer may exist without points of tenderness so that we can not exclude the diagnosis of gastric ulcer because of the absence of tenderness.

Dr. F. M. Pottenger, Los Angeles: Dr. Schmoll has referred to the matter of typhoid fever. How often is acute tuberculosis with fever treated for typhoid fever? Many times the diagnosis is made by the Widal test, and it is reported to me that this is the second attack that this patient has had. Another point with regard to the discovery of bacilli in the feces of tubercular patients. We have made routine examinations of the feces and have some 250 cases examined, and you would be surprised to know that the bacilli are found in two out of three cases of advanced tuberculosis. We do not make this examination of the feces until the patient has been thoroughly instructed with regard to the swallowing of the sputum, then when the alimentary

tract is cleared out we find the percent of 2.3 of the patients, who have a considerable number of bacilli in the stools. Another point in regard to the larynx, there have been a number of cases treated for partial paralysis and treated by different methods, such as electricity, when the actual cause of the apparent paralysis was perhaps pointing down to the anterior larynx to adhesions or enlarged glands. If you look at the larynx you will see that the cords do not come together and yet it is not paralysis at all, but an action upon the nerves by the glands. Another thing regarding the actual conditions of the apex of the lung, I do not think that the doctor would have you think that is always true. We are trying to make the people get away from this catarrhal disease. The general profession has believed so much in the catarrhal apex that they have called many things that. I have seen several of these cases where we could not determine whether there was tuberculosis present. We must be very careful before we make our diagnosis, and do not depend upon the fact that there is a catarrh of the apex but remember that most commonly the catarrh of the apex is tuberculosis.

Dr. D'Arcy Powers, San Francisco: Dr. Cooper has drawn our attention to the fact that there are no infallible signs and that we must be very cautious. It is true, also, that we sometimes let the pendulum swing too far the other way. We have had this pointed out to us so often. You take the most of these signs and though you may have them prove false here and there, yet they are things upon which we rely, and usually safely rely, in such diseases. It will be admitted that the Widal now and then does not give a true ring, but in 90 per cent of the cases it is true. So it is in the blood test, it fails very largely, but it is extremely valuable as a rule, and with regard to the possibility of a pre-existing disease. We note the development of an empyema in cases of acute lobar pneumonia. So it is all over the field. An apex crepitus may be something else, but it is most likely to be tuberculosis. The aortic insufficiency is usually marked by distolic murmur. We will do very well indeed if we do not allow too much skepticism creep in. Of course we must be very cautious with all of these signs. Another thing, I think it would be retrograding in the medical field if we were to lean to what Dr. Schmoll has said in speaking of clinical diseases away from their etiology.

Dr Cooper, San Francisco: If I had read this paper as it was originally written I would not have had time to read it in the time alloted. I had to cut it down considerably and so may not have expressed my ideas as fully as I intended. I agree with what Dr. Pottenger has said that every case of chronic apical catarrh should be treated as a tubercular process. It is only in our reports of such cases, especially when they have improved, and have gotten well, that we have to be careful that we are not including processes which may be catarrhal in character or syphilitic. If we do this we will make our reports much more valuable. Dr. Powers has sounded the warning that we should not be too skeptical. I would personally doubt the pathognomic signs because that would assure my making a complete and careful examination of the patient. It is for that purpose that we should be more skeptical. The mistakes are made by the man who sees the signs present and turns away from the patient with his diagnosis based upon what he has seen. If he has some doubt in his mind as to the reliability of that sign, he would re-examine the patient and arrive at the proper diagnosis

"A RESUME OF THE WEBER CASE."

Discussion of "A Resumé of the Weber Case: Was Adolph Weber Insane?" by Dr. R. F. Rooney, Auburn, printed in the Journal for May, 1908.

Dr. Gray, Eldridge: I have been much interested in this paper dealing with this young criminal and with his general mental condition. Another explanation of the mental and moral condition of this young man strikes me. It was brought out very clearly in the family history that this individual had an imbecile brother. There was, in other words, a clear stratum of degeneration in that family somewhere, and if it had been possible, I would have been glad to have had some further enlightenment with regard to the grandparents and other relatives of this young man, because coming, as I do, from a home for feeble-minded children, I can not avoid the conclusion that a considerable light can be thrown upon a case by the history of the family. I would not say that the case could not have been one of paranoia, but I am free to say that the history presented a very admirable history of the moral imbecile. I see, of course, a number of such cases. The picture is so clear in this case that I feel that it affords a good explanation of the behavior. The mental workings of an imbecile may be very clear. In our population I have a boy of six whose mental reasonings seem clear, and he tries to do as we tell him, but he has tried three times within the past three weeks to run away. He had not the money so he went to the postoffice and broke in and helped himself. He was detected and brought back. The supervisor of the institution called upon him for an explanation and he simply said that he could not go away without money and had to get it. We asked him whether he had ever done this before and he said that he had. He said that he had not the slightest appreciation of money and that because it is in the possession of some one else, it did not matter, and he can not appreciate the fact that the thing he desires he can not take.

Dr. J. W. Robertson, Livermore: It is almost an axiom in legal medicine that the more horrible the crime the more certain it is that the crime is the result of insanity. Moral insanity is not a disease and not even a mental disease. Moral insanity is regarded as one of the forms of mental disease. While it may not be complicated by delusions, as in this case, it is certain that many forms of moral debasement have their bases in an absolute mental condition. These moral degenerates should be protected and not punished. Both in the Durrant case and in this case referred to there is no question but what insanity was the basis of their condition. It is true that wherever insanity is the basis, the public feeling is so great that it is almost dangerous to present the defense of insanity. This is the only defense of such cases. In the Durrant case I believe that it has been properly urged and in the Weber case I personally urged to have this as a defense. Not that I believe that either man should have been acquitted, but in every case this should be the defense and the case committed to an institution built in the middle of San Quentin and there held for life, and this not for the purpose of punishing the patient but for the protection of the public.

Dr. A. M. Gardner, Belmont: I have been much interested in this paper and think that Dr. Rooney's position is correct. If Dr. Rooney's detailed account of Weber's case is correct, and if the symptoms were properly set forth, then Weber has been the subject of a judicial murder. But, unfortunately, this would not be the first instance where a judicial murder had been the result of trial upon those who were not responsible for their actions at the time. It is not at all astonishing to me that Dr. Rooney, and perhaps

those taking an interest in the trial, did not succeed in having the facts brought before the notice of the jury. When we find the Supreme Court of the State of California recording an opinion that a man may be morally insane but not legally insane, we are not astonished in the least that those trying such cases, lawyers and judges included, do not know and do not realize and do not appreciate these conditions of the abnormal man. If I have time I should like to refer to a case, that of a young man who was an inmate of Napa. Dr. Robertson knew him well. He suffered with paranoia and he will always suffer from paranoia. He improved to such an extent that the request was made that he might leave the institution with a nurse. He left and he ran away from the nurse. He then took up the life of an author and wrote very creditably.

At the trial I was asked what procedure I thought best to pursue in order to ascertain the facts of the case. I and other practitioners examined the young man and we all said, at the conclusion of the examination, that so far as he had evidenced, there was no indication of insanity. Yet he had delusions that his sisters were trying to poison him. He acknowledged to having had these delusions formerly but not at this time.

Dr. R. F. Rooney, Auburn: Because of limited time, I omitted large parts of this paper. I can not trace, in the meager details which I have received, any trouble, mental or degenerative, in the family on either side. But I am satisfied that if we could go back far enough, we could find the trouble. Calling this imbecility is begging the question. The victims of paranoia are those who have a mental twist. This young man was perfectly normal up to the sixteenth year, he was bright in school and his moral nature was perfect. He loved his little imbecile brother and spent hours in his company. It was after he began to deteriorate that he began to abuse the child. He did rapidly deteriorate, and it is a case of paranoia. I am absolutely certain.

THE EARLY SYMPTOMS OF DEMENTIA PRECOX.*

By CHARLES LEWIS ALLEN, M. D., Los Angeles.

While specialism in medicine is necessary and makes for progress, with the general practitioner must remain the bulk of responsibility for the recognition and treatment of disease. As it is under his observation that departures from health in the majority of instances first come, he must be acute to grasp and able to interpret clinical symptoms, since upon his ability to do so the ultimate outcome will largely depend. By no means the least important of symptoms are those of disturbed mentality, and being familiar with the normal mental reactions of his patients, the family physician occupies a position of advantage in deciding whether certain manifestations are abnormal or not. It is hence urged that a malady which leads to the intellectual desolation of many promising youths and maidens, cannot but intimately concern him.

Adolf Meyer in some recent communications has strongly urged the necessity for more careful study of the psychology of dementia precox, to the end that its roots may be traced back as far as possible into early life, into which they probably extend, with a view to correcting such morbid habits, mental and physical, as may there be found, in the hope that by so doing the otherwise inevitable mental deterioration may be avoided and the threatened victim may be rescued to sane and useful existence. The name itself is open to the objection that it predicates a necessarily unfavorable outcome and it has been opposed upon this ground since even Kraepelin himself admits that a proportion of the patients recover. Few, however, will dispute the service rendered by this author in grouping together under the name dementia precox a number of conditions having common features of onset and outcome. As Meyer puts it, however, regarding this disease only from the standpoint of its frequent outcome, is much like failure to distinguish between tuberculous infection and its advanced stage, consumption, the prognosis in either case being correspondingly unfavorable; and just as the outlook in tuberculosis is hopeful in proportion to how early it is discovered, so if we wish to improve the prognosis in dementia precox our endeavor must be to detect it early in the premonitory stage if possible. Jelliffe has also made some pregnant suggestions in his paper on Predementia Precox.

As in most forms of insanity, heredity plays a considerable role, a family history of insanity or neuroses having been found by Kraepelin in seventy per cent of his precocious dements. It appears as if the form of the disease itself is transmissible, though, of course, few precocious dements marry and produce offspring. Acute infectious diseases and stress of various sorts are often antecedent, but not more frequently than in other psychoses. Its course and the chronic degenerative changes found in the brain cortex in advanced cases favor the idea of a chronic intoxication of some sort, but as to the toxic agent we are entirely in the dark, though some perversion of the internal secretions, especially those of the sexual glands, has been suggested.

Kraepelin has enlarged the boundaries of his group from time to time and now takes in a number of different conditions, having in common, more or less gradual onset during the second and third decennia of life, tendency to dementia and characteristic dulling of the emotional sphere. The memory may be good, orientation little disturbed, and the ability to grasp impressions may be preserved, but the patient is unable to fix his attention for any length of time, is easily distracted, there is inability to co-operate impressions or to think and act in a normal way, and judgment is seriously impaired. Traces of negativism—by which is meant lack of co-operation and resistance to all measures, with apparent perverseness of speech and manner—and a certain stereotypy of movements are seldom absent. False sense perceptions are nearly always present, especially in cases of acute or subacute onset, affecting in order of frequency the spheres of hearing, sight and common sensation. Delusions are nearly always constructed, a fairly well co-ordinated delusional system differentiating a special clinical division. A characteristic of the disease is a lack of co-ordination between concepts and contra-concepts, and a tendency to intrusion

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

of the subconscious into the conscious sphere. The play of thought and action is much disturbed and the patient often has the feeling that something strange and foreign is suddenly thrust with irresistable might into his consciousness, hence is led to accuse outside influences of causing him to speak and act in the sudden, inappropriate and bizarre manner which marks this psychosis.

An explanation of the mannerisms in speech, tendency to form new words, constant reiteration of a word, a phrase or senseless syllables (verbigeration), incoherence, stereotypy of movements and negativism is based upon these psychological grounds, and as an anatomical basis, interference with the association tracts may be suspected. The patient often appears to be suffering from an inhibition of will and an inability to co-ordinate impressions or to express or suppress impulses. Hence at times excitement, again stupor with obstinate resistance. He also shows increased susceptibility to suggestive influences and imitativeness. Stransky has pointed out that a characteristic feature is the loss of the normal co-ordination between the intellectual and emotional spheres (his noopsyche and thymopsyche). This blunting of the emotional sphere is one of the earliest symptoms and explains the loss of feelings of sympathy, politeness and self-respect, causing indifference to conventionalities and inability upon the part of the patient to adapt himself to his surroundings.

There may be diminution of common sensibility, vaso-motor disturbances, and occasionally epileptiform attacks. Some changes in the eye grounds and in the pupillary reactions have been reported, notably by Clark and Tyson in this country, but their diagnostic value has yet been hardly established.

Of the three divisions made by Kraepelin, hebephrenia, the psychosis par excellence of adolescence, shows especially the intellectual defect, katatonia is marked by negativism, stereotypy, stuporous and excited states, dementia paranoides presents preponderance of delusional ideas, notably those of persecution and of grandeur, and tendency to their development into a system. The disease is generally ushered in by a period of depression, complaints of headache, disturbance of sleep and change of disposition upon the part of the patient. Dullness or restlessness may be present, depending upon the form which the disease is taking. Mixed forms are by far the most frequent. Since adolescence is a period of change and formation of new adjustments, many brains being improperly constituted through hereditary or acquired causes, are unable to stand the stress of rearrangement and give way.

Stanley Hall says: "There are two missing links indispensable to a full acquaintance with the many forms of precocious mental decay; first and chiefly, knowledge of the actual changes during the stage of puberty and later adolescence, which go on within the limits of sanity. This age has often been characterized as that of mental and moral inebriation and of psychic madness, and from any studies of its phenomena I am convinced that nearly all its symptoms can be paralleled in the inner and outer life of youth who do not lapse toward the terminal imbecility, but develop to sane and efficient maturity. * * * The other gap is the absence of record or available knowledge of the early stages in the development of the disease before cases come to asylums."

Many persons, he thinks, pass through mild attacks and are slightly impaired, without ever coming under medical observation. Let us compare with Hall some of the special psychic traits of puberty and the symptoms of dementia precox.

1. Tendency to inner absorption, revery, and unrestrained phantasy, "the birthday of the imagination" with illusions and the development of a delusional system.

2. Development of consciousness of self, intense introspection and self-criticism, with anxiety, morbid doubts and fears, imperative conceptions.

3. Overassertion of individuality and exaggeration of the ego, with delusions of grandeur and of altered personality.

4. Faculty of imitation at its height, tendency to mimic the mannerisms of gait, style of dress, etc., of others, with increased susceptibility to suggestion, echolalia, echopraxia ("Befehlsautomatie").

5. Tendency to assume theatrical roles and postures, with stereotypy.

6. Exaggerated self-consciousness and fear of ridicule leading often to senseless sayings and doings, with the impulsive and silly acts of the precocious dement.

7. Vocabulary enlarging and meanings of words being readjusted with the tendency to form new words and senseless combinations of words or syllables. (The "word salad" of Forel.)

8. Shyness and bashfulness, development of new feelings of sex and religious ideas, with sexual and religious delusions.

9. Changes taking place in the vascular and digestive apparatus may give rise to new and strange feelings, vaso-motor and digestive disturbance, insomnia, or somnolence, gluttony or refusal of food.

The methods of psychical analysis, especially by study of the associations, as begun by Freud and amplified by Jung and the Zurich School have shown the similarity between many of the symptoms of dementia precox and those of hysteria. Freud is of the opinion that this latter has always as its basis a disagreeable experience of some sort, in most cases of sexual character, and that the habitual effort to suppress the souvenirs of this experience causes increase in strength of the normally present contra-concepts, or as they are called by Jung "negative associations," which may gain so much the upper hand that normal mental action is impossible. On this basis Jung explains also, the narrowing of consciousness, negativism and other symptoms of dementia precox. The morbid associations detected, their removal if possible by the "mental catharsis" of Freud, or the "sidetracking" of Dubois has been urged as a helpful method of

treatment in functional conditions, and Jung suggests that it might be possible in the earliest stages of dementia precox to so modify faulty associations and mental habits as to favorably influence the course of the disease, since even granting its toxic origin may not autointoxication be at least partly due to the effect upon the secretions of disordered nerve processes?

The symptoms of dementia precox are fairly characteristic, and should be sought for in any young person who shows unaccountable change in habits and disposition. In this connection the scientific study of the mental and physical characteristics of the pupils in our schools and colleges should put at our disposal valuable information and this work should command the support of all physicians.

REFERENCES.

Meyer, Adolf, British Medical Journal, Sept. 29, 1906, and Journal of Nervous and Mental Diseases, May, 1907.
Jelliffe, S. E., American Journal of the Medical Sciences, August, 1904.
Kraepelin, E., Lehrbuch der Psychiatrie, 7 Auflage, 1904.
Stransky, E., Jahrbucher fur Psychiatrie, 1903.
Hall, G. Stanley, Adolescensce, N. Y., Appleton, 1904.
Jung, C. G., Die Psychologie der Dementia Praecox, Halle, 1906.

Discussion.

Dr. Moore, Los Angeles: As the doctor has said, the essence of this question is time. Dementia praecox is dementia and dementia is a disturbance of the mental sphere. If that is so and if the mentality depends upon the visible condition of the cells of the brain, then when the cells of the brain have begun to degenerate there is no hope for them. We may be able to stop the degeneration, but can not put back the cells when they are dead. Therefore I say that the essence of this thing is time, and as Dr. Allen has said, it is Dr. Allen who sees the cases first. The essence of the diagnosis of dementia praecox is peculiarity. A child who is peculiar is a child who ought to be watched and who is the one who will develop dementia praecox, and when it is developed that is the end. Peculiarity may arise in almost any sphere. A case was under my observation two months ago which has gone on and is now in an almost complete state of dementia, in which the only symptom (the boy has been a perfectly normal boy of strong mentality) had been all through his life a condition for which I can not find words, except to say that it was involuntary liziness. The father had tried to make him do certain things and he could not do them—he wanted to do them but he could not. There were no other symptoms until he began going into the negativism and a very rapidly increasing dementia. It was involuntary laziness. If it could have been rectified early, if he could have been put on a ranch and have been made a rancher, his mind might have been saved. But the nature of his peculiarity was not recognized. The essence of the thing is time, and the time is in the hands of the general practitioner, because when the specialist gets the case he has a case before him in which he is as much interested as the surgeon is when he gets a technically perfect operative case, —but the patient dies.

Dr. Allen, Los Angeles: In the hands of the general practitioner remains the recognition of the early stage of this disease. If he recognizes a peculiarity in a child he should suggest such changes in the methods of training that child as will prevent the development of this patient to that stage which makes him a care to the community.

FUNGUS COCCIDIOIDES.*

By H. A. L. RYFKOGEL, M. D., San Francisco.

The first case of coccidiodes on record occurred in Buenos Aires in 1892. With the exception of this case, all others have lived in California and of them 50 per cent have been domiciled at one time or another in the San Joaquin valley.

The next two cases were reported by Dr. Emmett Rixford of San Francisco. He and Dr. Gilchrist, who studied the cases with him, did not succeed in cultivating the organism and concluded that, on account of its peculiar structure and growth in the body, that it was not a fungus, but belonged to the animal kingdom group of protozoa, and gave it the name coccidioides imitis. Dr. Montgomery of San Francisco saw the next reported case. He evidently obtained a growth of the organism, but thought it a contaminating mold and destroyed it.

The fifth case occurred in the service of Dr. Herbert Moffitt at the San Francisco City and County Hospital. At autopsy the distribution of the abscesses necrotic areas and granulomatous abscess suggested glanders, and slides and cultures were made and guinea pigs inoculated.

In the pus the bodies previously described by Rixford were seen. In the culture a mold appeared which was believed to be at first a contaminating fungus; the pigs were later killed and autopsied and when the same fungus appeared it was realized that it was an extra corporeal cycle in the growth of the bodies seen in the pus.

Dr. Ophuls observed the direct transformation under the microscope and the proof that the bodies were stages in the life history of a fungus and not protozoa was complete.

Coccidioidal disease must be classed among the infectious granulomata. You will remember that in all the granulomatous diseases, anthrax, glanders, tuberculosis, syphillis, rhinoschleroma and coccidiodal diseases, the local lesions are the most marked feature; in contradistinction to the products of acute inflammation, the new growth seen in these diseases is relatively permanent and the organisms causing them are able to live for a much longer period in the body without being destroyed by the protective forces.

In their chronicity they form an ascending series with anthrax, a very acute disease, and leprosy, a very chronic one; the local lesions all consist of an infiltration of the tissues of new growth resembling granulation tissue, but differing from it in relative permanence. In this structure endothelial giant cells and lymphocytes are more abundant than in ordinary granulation tissue. The poisons of the tubercular bacillus, fungus coccidioides, etc., seem to have the power of exciting a proliferation of the connective tissue cells and later causing them to necrose; the necrotic tissue then attracts the leukocytes and the typical tubercle is produced. The tubercle bacilli do not possess the power of attracting leukocytes as do the staphylococcus and streptococcus pyogenes; they only do so indirectly.

* Read before the San Joaquin Valley Medical Society.

The various granulomata, though conforming historically to a general type, differ so markedly among themselves that microscopic examination of the granulomatous tissue can usually distinguish them without isolation of the specific organism. To this there is an exception—the lesions of coccidioidal are identical in their histological structure with those produced by the tubercle—the spores of the fungus seem, however, to attract leukocytes and there is therefore a much greater tendency to early multiple abscess formation than in tuberculosis.

Morphology.—In examining a drop of pus from a coccidioidal abscess, there will be seen numerous spherical bodies of varying size; the adult forms are about four times the diameter of a red-blood cell, they are surrounded by a highly refractile, double centered membrane; from this membrane when unstained very numerous spores project—no nucleus has been demonstrated. In the tissues this organism grows by endogenous spore formation, the protoplasm divides in two, then four, etc., until a large number of spores, usually a hundred or more, are formed; a tear then forms in the capsule and the spores are discharged; empty capsules can usually be found in the pus. Some controversy has been waged as to the relation of this organism to the blastomyces that produce certain dermatitites and even fatal general infection. That they are related can not be doubted, but it is certainly not proved that they are identical; the blastomocytes always grow by budding, not by endogenous spore formation, as does the fungus coccidioides; the blastomytes grow similarly in the tissues and in culture media, where as the fungus coccidioides, as will be presently explained, grow entirely different in the tissues and in culture media. The blastomocytes usually produce a skin lesion; the fungus coccidioides only sometimes; the blastomocytes infections are usually easily cured; the fungus infections have with one exception all proved fatal. If one of the bodies from pus be watched under the microscope the thick membrane becomes thin in one place and begins to evaginate over a bud of advancing protoplasm; this soon forms a coarse thread, the thread later becomes divided at various points and branches. Some of the branches grow into the air, forming aerial hyphæ, and on these there are formed spores by means of contraction of the protoplasm, the fungus grows readily on all the usual culture media as a dense, felted network closely attached to the media.

At times the aerial hyphæ are so numerous that the culture looks like fur or wool. When the fungus is injected into an animal these spores swell and become transformed into protozoon-like bodies, which they multiply by endogenous spore formation; if these spores are transferred to fresh media they send out hyphæ and grow as a mold.

It will be seen that the growth and appearance of this fungus in tissue and in culture media in no way resemble each other.

Animal Inoculation.—If an animal be inoculated subcutaneously with pus or culture, no lesion, or a small abscess which rapidly heals, results; if the injection be made intraperitoneally, the characteristic infection takes place, consisting of numerous tubercles, caseous areas and abscesses; if the animal be a male guinea pig a suppurating periorchitis almost invariably occurs. You will remember that this reactions—a periorchitis—following peritoneal injection of pus, was formerly supposed to be pathognomonic of glanders; coccidioidal disease is the only other known disease in which it occurs.

The cases seem to be separated into two groups: First, those with primary cutaneous infection; second, those with primary pulmonary infection.

Those with primary cutaneous lesions show pulmonary involvement later, and those with primary pulmonary lesions frequently develop skin disease; although the first four cases all showed skin lesions, many of the later have not done so.

The general macroscopic appearance of the tissues taken as a whole at autopsy resembles glanders very closely and many of the cases bear a clinical resemblance to this disease, although the histologic and macroscopical appearance of the tubercle, as before mentioned, are identical with tuberculosis. The skin lesions usually resemble some of the tubercular skin lesions. Some of the cases, however, presented the large tubers with secondary ulceration seen in mycocis fungoides. In some, the skin lesions were present for years—seven to eleven—before the internal organs were affected; the progress of the disease is rapid, spread occurring by both lymphatics and blood channels.

In all the organs the disease appears as miliary tubercle or miliary abscess, although in some cases large abscesses occur. As in staphylococcus infection, multiple osteomyelitis occurs.

The symptoms depend largely upon the site, rapidity and extent of the lesions. Chills and sweats are usual, especially late in the disease, showing that the parasite secretes a poison which has a wonderful effect on the heat centers. In the first case seen by me the patient had the skin lesions eleven years and was then suddenly taken with the symptoms of pneumonia. At autopsy the lungs were filled with the tubercle, a section of which I show you under the microscope.

The case of Dr. Moffitt began three months before death with a chill; in three days one gallon of fluid was removed from his pleura; then there occurred progressive suppuration of both knee joints, one shoulder, both elbows and wrist, suppurative periostitis of frontal bone and periostitis of tibia. The autopsy showed consolidation of lung with abscess formation, necrosis and abscesses of numerous lymphatic glands, nodules and abscesses in spleen and liver, but no skin lesions.

Dr. Hirschfelder's case showed the symptoms of meningitis. Autopsy findings: Pseudo tuberculous (coccidioidal) meningitis with involvement of pericardium, spleen and kidneys; no skin lesions.

Dr. Sander's case showed an osteomyelitis of the foot, the diagnosis was made and the leg amputated. This patient is the only one known to have been cured of the disease.

In Dr. Montgomery's first case a cough developed as the first symptom ten months before death; two

months before death, cutaneous lesions like those of mucosis fungoides appeared. At autopsy diffuse pulmonary consolidation and an immense liver abscess were found.

In all, eighteen cases have been reported; in five of these the initial lesions were in the skin, in three of the remainder the skin was later involved; in ten no skin lesions occurred. It will be seen that there is no characteristic set of symptoms constant to the disease; when, however, multiple abscesses or persistent skin lesions or unexplained pulmonary infiltration occurs, the disease should be suspected and search made for the parasite. A drop of the pus under the microscope will reveal typical spherical bodies. As yet no clue has been obtained as to how this infection is carried. Systematic examination of the small animals dying or showing abscesses should be made and thus the mode of transmission of this terrible disease might be found and its spread stopped.

SMALLPOX.*

By C. H. WALKER, M. D., San Jose.

In view of the fact that smallpox is on the increase in our city and other towns and cities of California, I have been asked to prepare a paper, long enough to start a discussion of the subject at least.

Smallpox, like bubonic plague, has carried off its millions of victims, but I shall avoid the history of the disease, only mentioning the last important epidemic, which occurred in Montreal, 1885, and was solely due to the opposition of the French-Canadians to vaccination.

My object tonight as health officer is to deal more particularly with the contagion, invasion and early recognition of the disease, owing to the lack of opportunity of many able physicians to see cases of variola. Mistakes in diagnosis are liable to be made early in the disease. Any eruption not certainly understood should be promptly reported to the health officer as suspicious, thus throwing the responsibility of diagnosis upon that officer, who is or should be qualified for this work. It is the health officer's duty to see that the physician who reports a suspected case of smallpox suffers no loss of confidence from the patient or his friends.

The protection of the physician interests is easily accomplished if the health officer is tactful and ethical as he should be. And the physician in charge should remember that the health officer many times makes personal sacrifices to protect him, and therefore the physicians of a city owe their support in protecting the conscientious health officer in the performance of his duty.

Variola is highly contagious, few persons unprotected by vaccination escaping the disease if freely exposed.

The contagium of smallpox is developed in the body, and given off in the secretions and excretions. The fine epithelial scales are supposed to be the most important factor in conveying the specific elements of the disease. It is generally admitted that the disease may be transmitted at any time during its course, but is most dangerous to others when suppuration is about to commence. However, in rare instances, people have been known to contract the disease from patients while in the incubation stage.

During an epidemic of smallpox public conveyances of all kinds, mail matter, money, etc., are active agents in its spread. It must not be forgotten that varioloid is smallpox modified by vaccination, and is capable of infecting a well person with the most malignant form of smallpox.

Epidemics of smallpox recur at irregular intervals, because long periods of freedom from an epidemic leads to public carelessness, with neglect of vaccination and consequent increase of susceptibility of the population to the disease. At the present time we have in this city a greater variety of eruptive and contagious diseases than at any time during the last five years, viz., scarlet fever, measles, chickenpox, smallpox, la grippe, diphtheria and typhoid fever. While the cases of each are few, they are to be considered, as smallpox may in the early stage resemble any one of these diseases. When there is a severe chill or series of chills, rapid rise of temperature, headache, backache and vomiting, reserve the diagnosis for three or four days, but be sure and isolate the patient. Incubation period is from ten to fourteen days. Occasionally there is a slight rise of temperature, but usually there are no symptoms during the incubation period.

When once the infection enters the system all means to stay the disease are of little benefit, except vaccination and that only in the first four or five days after becoming infected. An exposed person should be vaccinated without delay, and to be sure repeat the operation daily until you see that one is beginning to take, thus taking no chances of failure and losing the opportunity of preventing the disease or at least modifying it.

Invasion—The chill of smallpox is more violent than in any other eruptive disease. As I have said, this may be one long severe chill, or a succession of shorter chills; the temperature rises rapidly until the evening of the third day, the pulse is full and increased in frequency from 110 to 150. The intensity of the constitutional symptoms of the stage of invasion does not always bear a direct relation to the intensity of the disease in its eruptive state. A very acute prodromal stage may be followed by a very mild eruptive state, although this is not the rule. The constitutional symptoms, however, which accompany the eruptive stage correspond in intensity with the extent of the eruption. As soon as the eruption appears and during the papular and vesicular stages, the constitutional symptoms rapidly improve and in mild cases this is the time when the disease is spread around, as the patients usualy feel well enough to visit the doctor, or calls on friends or takes a trip on the railroad and insist that there is nothing the matter as they do not feel ill. The writer thinks that these are the most dangerous cases in spreading the disease, and from the viewpoint of the health officer should be dealt with in the most positive manner.

* Read before the Santa Clara County Medical Society on January 15, 1908.

Eruption—This appears on the evening of the third day after the initial fever, or more frequently on the fourth day. The eruption appears first as macules, scarcely raised above the surface; these rapidly change to papules. They are first observed on the forehead, near the border of the hair, and on the wrists and forearms. If the case promises to be a bad one, these macules are so close together as to resemble that of measles. In less than twenty-four hours the eruption appears on the body and limbs. These papules have a "shotty feel" beneath the skin. During the second or third day vesiculation commences, twenty-four hours later umbilication of the vesicles develops, and by the eighth or ninth day the vesicles are transformed into pustule. When the disease has progressed to this stage no physician could possibly fail in diagnosis.

In severe cases many distressing symptoms and complications may appear, such as cough, sore throat, cutting pains in the pustules, injected eyes, photophobia may be extreme and sleeplessness. Desiccation begins on the eleventh or twelfth day and occupies from one to two weeks. The swelling and redness disappear with the drying up of the pustules. The crusts drop off, leaving the surface formerly covered by each crust of a reddish brown hue or of a cyanotic color with elevated edges; this, then, is the course of the ordinary form of smallpox —variola discreta.

I shall simply mention some of the other forms, which will probably not be met with during our mild epidemic that seems about to get a footing in San Jose: Variola confluens, variola haemorrhagica, Purpura variolosa and variola haemorrhagica pustulosa, these are varieties as their names indicate.

Of the comparisons I shall say nothing.

Diagnosis—In the pustular stage of smallpox, a well-marked, abundant eruption is hard to confuse with any other disease. Its early recognition, however, is not always easy. I have mentioned a few diseases with which smallpox might be confused, but there are others. A few years ago, during a smallpox epidemic in a certain Eastern city, a large number of cases were incorrectly diagnosed and sent by physicians to the smallpox hospital, and these cases represented no less than twenty-five different diseases.

The prodromal eruption of variola is most frequently confused with measles or scarlatina. In measles the eruption appears upon the entire face and back simultaneously, it is preceded by fever, but that fever is associated with marked catarrhal symptoms. The stage of invasion is less severe in all its manifestations. It is not always possible to get a clear history of the prodromal symptoms of smallpox, and further it is not uncommon for the eruption and the later constitutional symptoms to be so mild as to be very deceptive. Even in the mildest cases, however, the few lesions which do exist about the forehead and wrists present the peculiar characteristics of smallpox. They are very hard, shotty papules, they are umbilicated vesicles or they are large, prominent pustules with prominent globular apices. They appear in the palm of the hand and soles of the feet.

In the vesicular stage smallpox is most likely to be mistaken for chickenpox. In chickenpox the lesions are more abundant on the body, less on the face and extremities; they do not have the characteristic shotty feel and do not umbilicate. Chickenpox vesicles collapse when punctured, smallpox vesicles do not collapse when punctured.

It may seem foolish to mention acne as a confusing factor in making a diagnosis, but when the lesions are discrete and are not abundant confusion with an indurated acne is possible.

In differentiating between any other eruptive disease the "grisolle sign," as described by Moore, may be of some service. If, upon stretching the skin the papule becomes impalpable to the touch, the eruption is not smallpox.

Finally and again, severe chill, intense headache and backache lasting three days, rapid rise of temperature, vomiting and a shotty eruption. Isolate the patient at once. Notify your health officer immediately, and advise all persons in the house to be vaccinated.

Personal Care of the Physician—The doctor should have a long robe, if not, do not remove your hat or overcoat. While in the house he should avoid touching anything except the floor with the soles of his feet. Avoid shaking hands with anybody.

Treatment—Promote elimination, relieve symptoms and sustain your patient.

SOME EXPERIENCES OF A HEALTH OFFICER.*

By H. J. B. WRIGHT, M. D., San Jose.

Garbage—Section 20 of Ordinance 1644 of the City of San Jose reads in part as follows:

"No person shall throw or deposit any garbage or any putrid or stinking animal or vegetable matter or filth upon any lands or creeks in the City of San Jose." Section 45 of this ordinance provides a fine of not more than $100.00 for a violation of this Section 20.

The health officer of this city finds it incumbent on him to attempt the enforcement of this Section 20 almost daily.

Theoretically, the prompt removal of all garbage from all parts of a city is easily accomplished, but in practice the result often comes short of the theory. Ignorance, indifference, misdirected economy, stubbornness and poverty are important factors tending to prevent a health officer from having all garbage removed before it becomes a menace to the public health. In most cities the board of health formulates plans and makes general rules, but the health officer must take the initiative and become the active agent in the enforcement of sanitary laws.

The following instances will serve to show what difficulties a health officer has to contend with and what mountains of opposition he has to climb in

* Read before the California Public Health Association.

order to protect the people from the evils of decomposing garbage:

A poor, helpless old widow occupies a small, dilapidated house, the rent of which she is hardly able to pay. She allows her garbage to accumulate near her back door, and in time it becomes harmful and offensive, and one or more of her neighbors notify the health officer, who immediately investigates and orders the old lady to abate the nuisance. The removal of the garbage will cost 50 cents or a dollar, and the tenant informs the health officer that she has no money with which to pay for the work and her credit is not good. The health officer next serves a notice on the agent of the owner of the property, and he replies that he has no instructions to apply money to the removal of garbage; besides it is the duty of the tenant to keep the premises in a sanitary condition. The owner of the property lives in a distant city. A letter addressed to him is returned to the sender, and further inquiry elicits the fact that the owner is in Europe. Thirty days have now passed, and the garbage in the backyard stinks worse than it did when the health officer first saw it, and the people in that neighborhood cry out against the inefficiency of the health department. It is true the old lady violated the ordinance, but her violation was one of necessity rather than one of choice. To arrest her will not remove the garbage. What can be done? The health department has no money with which to pay for the removal of filth which is lodged on the premises occupied by poor people. The officers might persuade a garbage hauler to remove the objectionable mass, and then attempt the collection of his bill, bringing a civil action against the owner of the property. But you must see at once that such a course would be impractical, for the costs of the action to the plaintiff would be ten times as much as his bill for removing the garbage.

The case here cited is an extreme one, but such cases do actually arise in all cities.

The following instance will serve to show how an equal difficulty arose from the acts of a rich corporation:

The Southern Pacific Railroad Company brought down from San Francisco during the three years last past hundreds of carloads of incinerated garbage, and deposited it in the northern part of San Jose where that company is making a very large switch yard. No objection was made by the board of health as long as the stuff brought down was properly incinerated. Unfortunately, the cars came down after a time, partly filled with raw garbage. During a few months in 1906 the company dumped hundreds of tons of decomposing or decomposable garbage within the exterior boundary lines of San Jose, and this to the injury and disgrace of this city. San Jose was being used as a dumping ground for San Francisco. A formal notice by the health officer, in which attention was called to the ordinance bearing on this subject, was served on the roadmaster, who had the work in hand. This brought a confession of negligence and a promise to discontinue the work. For a few months the promise was kept. A renewal of the outrage brought an action by my successor in office, charging the roadmaster with violation of the ordinance under consideration.

The defendant asked for a jury trial and the jury brought in a verdict of not guilty, the evidence showing that the defendant did not, with his own hands, dump garbage in San Jose. Now had the ignorant laborers, who were in the employ of the company, been arrested and brought to trial charged with throwing or dumping garbage in this city the jury would, in all probability, have brought in a verdict of not guilty, basing their conclusions on the fact that they (the laborers) only did what they were ordered to do and they were ignorant of the law. The jury would have said the roadmaster ordered this work done, and he is to be blamed if any one. The roadmaster is the real offender; punish him. These cases serve to show some of the difficulties that stand in the way of the official who tries to keep a city free from garbage, tries to enforce an ordinance which was wisely made for the protection of the people and the promotion of the public welfare.

There is another side to this garbage question—a side which is more pleasant to look upon and more inviting. It is worth noting and remembering that at least ninety-five per cent of our people do obey the ordinance under consideration, thereby manifesting a commendable spirit of cleanliness.

Several years' work as a member of a board of health convinces me that each city should take over the business of garbage removal—that the people who have decomposing or decomposable matter on their premises should be required to place it in covered receptacles, where it could be reached by men employed by the city to haul it away at stated intervals and in a certain manner. In other words, the city government should assume more duties with their corresponding responsibilities, trusting less to the individual citizen. It is all well enough to appeal to the civic pride of our citizens, but while we are making the appeal it must be remembered that the garbage is rotting in their backyards, and the energetic enforcement of the law is more effective than appeals.

Births and deaths—The number of births in San Jose during the year ending June 30, 1906, was 373. The deaths numbered 413, but 18 deaths were caused by the earthquake, and these should be deducted from the total because they were unusual and accidental. After such deductions, we have 395 as the deaths for the year; but the births were only 373.

The population of San Jose during the period under consideration was 29,500, which makes the percentage of deaths 1.33, or 13+ to the thousand population. That the births should number less than the deaths, when the mortality is as low as 13+ to the thousand, deserves serious consideration. The deaths being in excess of the births, any increase of our population must be due en-

tirely to immigration. The birth rate is not only lower relatively, but it is low positively.

Of the 373 children born in San Jose during the year ending June 30, 1906, about one-fourth had parents who were foreign born and a large number of the remaining three-fourths had one parent who was foreign-born. To me these figures are very important when studied in connection with other relevant facts.

It is a lamentable fact that nearly one-half of the inmates of the insane asylums of this state are of foreign birth, but only *one-fourth* of our inhabitants come to us from foreign lands. Twenty-five per centum of aliens in this state furnish fifty per centum of our insane. This is certainly of more than passing significance; that heredity is an important factor in the causation of insanity all are agreed. Now that class of our citizens, which constitutes twenty-five per centum of our population and is so prolific of subjects for our asylums, is also as productive of children as that class whose progeny are less frequently found in our insane asylums. It is not my pleasure to say whether or not it would be better for the native-born people of San Jose and the State of California to be more prolific, but I will venture the hope that if either class shall become less prolific, it may be the foreign-born.

The burial of the dead—The state law governing the burial of the dead has become the law of all the cities of this state, and a very good law it is. Under this law, it is a misdemeanor for any person to bury the body of any human being anywhere in this state without first having secured a permit from a registrar or subregistrar, who has been specifically set apart for that purpose. Before such a burial permit can be granted, the issuing officer must be furnished with a death certificate signed by a legally qualified physician or a coroner, and said certificate must contain many facts as to age, sex, nativity, cause of death and so forth. The permit may give permission to bury the deceased in a backyard, an open field or a cemetery.

It happens occasionally that people desire to inter prematurely born infants in a corner of the garden, and such interment is sometimes made secretly. It must be apparent to all that such secret disposal of the dead is fraught with danger to the public, for much crime might be concealed in that manner—even the crime of infanticide.

Physicians and midwives should aid the health authorities in their efforts to have all the dead legally buried.

Oak Hill Cemetery, which is more than a mile outside the City of San Jose, is under the supervision of the Mayor and Common Council. The earthquake killed about 150 people in Santa Clara County, and a large percentage of these had to be buried in Oak Hill. The Cemetery Association can bury eight or ten bodies daily, and do it in an orderly and becoming manner. When application was made to the board of health of San Jose during the troublesome days immediately following the quake for burial permits for the interment of 20 or 30 bodies daily, both the registrar and the Cemetery Association were too busy to be formal; this resulted in a few permits being slightly wrong, the error being due to defective certificates of death issued by the coroner. In two instances these errors caused some trouble. The body of a man found in the ruins of the buildings at Agnew Asylum was buried in Oak Hill Cemetery on a permit issued by the board of health of San Jose as that of John Blank, and the interment was attended with very considerable ceremony and no small expense to the mourning Blank family, all of whom were residents of Santa Clara county. A day or two after the burial the real John Blank presented himself to the mourning Blank family to the very great surprise of all. In fact, he had not been hurt in the crash of the asylum buildings at all. A pauper had been buried with more honor and at more expense than is usually extended to people of his class, and all because a mistake had been made. In another instance, a permit was issued for the burial of James Wilson Rogers. Some days thereafter the relatives appeared before the health officer, stating the true name of the person buried was not James Wilson Rogers, but John William Rogers and they wished the records altered in keeping with the facts.

Suppose that John William Rogers had conveyed a piece of land, reserving a life interest in it, and suppose again that the said John William Rogers disappeared from San Jose and died in a distant city, where he is not well known and his body is shipped to San Jose for burial and the accompanying certificate gives the name as James Wilson Rogers. The deceased has no relatives in San Jose, and the burial permit is made out for the interment of James Wilson Rogers and the body is laid away as that of James Wilson Rogers.

The person to whom the land was conveyed tries to sell it, and the wily lawyer finds John William Rogers reserved a life interest in the property, and there is nothing of record to show that he is dead. The owner of the realty is sure he is dead, but a search of the records shows that one James Wilson Rogers died in the city of Denver and that a burial permit was issued by the board of health of San Jose for the burial of James Wilson Rogers and the records of the cemetery show that James Wilson Rogers is buried in a certain lot and a certain grave, but James Wilson Rogers is not John William Rogers. Much trouble ensues, and perhaps long and expensive legal proceedings, and all because a mistake was made in a death certificate. It is apparent that vital and mortuary records must be kept with great care, or they become unreliable and perhaps actually harmful. These records being for the public—that is to say being public records—they cannot be altered except in accordance with certain statutes made and provided for such cases. The board of health has no right to change a record once it is made up, but it can be changed by the State Board of Health after ample documentary evidence has been submitted to the secretary of that body.

A certain house in San Jose having been used for a considerable length of time as a hospital and then abandoned, was found to contain the preserved remains of several prematurely born infants. The auctioneer who had been engaged to sell the house and its contents wanted to know what to do with the infants. He was directed to bury them, first having secured a proper burial permit from the registrar or subregistrar, namely, the assistant secretary of the board of health; but such a permit implied a death certificate signed by a legalized practitioner of medicine or the coroner. The auctioneer was quite certain he could not get a certificate from a physician, and to have the coroner hold an inquest on the infants would cost the county a hundred or a hundred and fifty dollars.

There was no other way to bury those wee specks of humanity without violating the letter of the law. To bury them without a permit would be committing a misdemeanor, punishable by fine or imprisonment. As an officer sworn to support the laws of the City of San Jose and of this state, I could not advise the auctioneer to dispose of the bodies in any other manner. For once I was like Desdemona, I perceived here a divided duty—one to the letter of the law and one to common sense. The law said "follow me"; common sense said "follow me and let the infants be buried in the backyard without a burial permit." What was done with those human remains I do not know and I do not want to know, but had I been the auctioneer I would have ignored the letter of the law.

Milk—Ordinance 1696 of the City of San Jose reads in part as follows:

"It shall be unlawful for any person to sell or offer for sale or to have in his possession for the purpose of sale within the City of San Jose any milk or cream without then and there holding a license in full force issued by the board of health of said city authorizing such sale. Said license shall not be issued except on the following expressed conditions to wit: That the person to whom the license is issued shall not himself or through the agency of any servant or employe sell or offer for sale or have in his possession for the purpose of sale milk or cream from any diseased cow or any cow fed in whole or in part on still slops or other food calculated to render the milk or cream of such cow unwholesome or unsuitable for human food; or milk or cream to which water or any foreign substance has been added or which contains less than 13 per cent of solids, one-fourth of which is butter fat.

"No license shall be issued authorizing the sale of milk or cream until the person applying for said license shall have filed with the secretary of the board of health a certificate of health, showing that the cows producing the milk to be offered for sale are free from tuberculosis and other dangerous, contagious and infectious diseases."

There are about one hundred and twenty people engaged in the sale of milk in San Jose. To keep all these people within the law is a very difficult task. It requires much time and forbearance, and sometimes a touch of force to hold all the sellers of milk up to within a stone's throw of the law. Of course, the board of health has no direct jurisdiction over the dairies located outside the city, but indirectly such dairies are subservient to the ordinance governing the sale of milk in this city, for the board of health may refuse to issue licenses to such dairymen as live outside the city until the quality of the milk offered for sale and the conditions under which the milk is produced are satisfactory to the board.

It is not always a simple matter to secure a fair sample of milk for examination. From the time the milk is poured into the can at the dairy until it is delivered to the consumer the cream is rising to the top of the milk. If the sample is taken from a full can, it is likely to contain too large a per cent of butter fat. If it is taken from a can from which most of the milk has been poured, the sample will contain less butter fat than the average of the full can because most of the butter fat will have been poured from the can with the cream. Some drivers are smart enough and mean enough to deceive the officer by having a can, which he pretends is empty but which in fact contains some cream. If the officer pours the contents of a can into the so-called empty can in order to mix it and then takes a sample he will be badly imposed upon. I have myself suffered such a fate.

The average per cent of butter fat found in 150 samples was 3 1-5%. Rarely a sample was found which yielded 4%. More frequently samples were tested which yielded only 2 2-5%. The samples from certain dairies were nearly always of the same quality as determined by percentage of butter fat. Some restaurants and at least one hotel were demanding cheap milk, and milk dealers were found who were willing to yield to their demands.

Some milk that cost the retailed 36 cents for three gallons was sold by him for 10 cents a gallon to those consumers who demanded cheap milk. Let us not be deceived; such retailers sold two gallons of milk for twenty cents, and added one gallon water for which they charged 10 cents more.

The retailer must have his profits and water is cheaper than milk. But milk that is sold for 10 cents a gallon looks pale—it is timid and lacks force and the restaurantkeeper goes to the drug store, and for a dollar gets enough golden milk coloring fluid to give an inviting color to barrels of pale milk. A few drops of this coloring fluid makes his milk have such a rich appearance that his customers are delighted with it. "Oh what fools we mortals be!"

The amount of cream is generally, if not always, determined by gravity. For such determination, I had glass tubes of three-fourths of an inch calibre, cut into pieces twelve inches in length. A quarter-inch scale was cut on the lower ten inches of each

of these pieces, so that ten inches of each contained forty marks one-fourth inch apart. Such a device is cheap and easily cleaned. When filled with milk up to the ten-inch mark and allowed to stand in a vertical position for twelve hours, it gives the percentage of cream in a very satisfactory manner; such a tube also shows the color of the milk and the amount of coarse dirt.

The amount of cream is often strangely out of keeping with the amount of butter fat. The average of fifty samples of milk gave 3 1-5% butter fat and 12% cream, but some samples contained 3 3-5% butter fat and less than 12% cream. Samples containing as little as 3% butter fat had as much as 17% cream, and in one instance a sample that had 4% butter fat had only 10% cream.

Can milkmen manufacture cream by adding a harmless thickener without increasing the cost of the product beyond what they can afford? Gelatine will give the desired result exactly, and it will not cost more than two cents per gallon. Pale-faced 10-cent milk can be thickened with gelatine and colored and sold for twenty cents a gallon at a profit of 7 or 8 cents. This is not only a possibility—it is actually done. Fortunately, gelatine is wholesome and little, if any, harm would follow its use as an adulterant, but its use is a deception and a violation of law. A very large number of objectionable substances are added to milk, either for coloring or preserving, but I cannot stop to consider them so I leave this subject for the consideration of food inspectors, suggesting to my hearers in passing that the volume of cream is not as true an index to the food value of milk as is the volume of butter fat. Much cream does not always mean much butter fat.

I need not remind you that there are several substances occasionally found in milk, which are more injurious to health than water, or gelatine, or coloring substances; one of these is the tubercle baccillus. During my incumbency of the health office in San Jose, an effort was made to prevent the introduction of this baccillus into the milk furnished to our people. To that end, I had about a thousand cows examined by licensed veterinarians for tuberculosis and other diseases. *Fourteen of every hundred cows thus examined were found to be tuberculosus.* All the cows in one or two herds of 15 or 18 were found to be free from this disease, while every cow in one herd of 14 was found to have it. At least 300 tuberculous cows in and about San Jose were being milked daily, and the milk delivered to consumers in that city. What disposition was made of those diseased cows, do you ask? Instructions were given for their immediate removal from the dairies and their milk was prohibited from San Jose, but a dairyman, whose entire herd of 14 cows is found to be diseased, can't be persuaded to kill all of his cows, thereby destroying all his invested capital and his entire income, and, under existing laws, the only thing I could do was to prohibit his milk. I believe every tubercular cow in California ought to be killed and deeply buried or cremated. Tuberculosis that kills more people every decade than war, famine and plagues put together will never be eradicated from our state until all the people are kept away from milk taken from tuberculous cows. Think of our children being fed milk, which comes from cows whose udders have many tubercles in them, some of which are alive with tubercle baccilli!

In conclusion, permit me to say that my experience has shown me that a city's milk will not be properly protected by a board of health that does nothing more than formulate rules and write letters to dairymen.

Every city should have an inspector for every 50 dairies. His work should begin when the dairyman purchases his cows, for no diseased cow should be allowed in a dairy and his duties will not have been discharged until he has compelled the retailers of milk to deliver it to consumers in sterile, well-stoppered, glass bottles.

Inspection and supervision and coercion are absolutely necessary to protection.

COMMON GASTRIC DISORDERS AMONG SCHOOL CHILDREN.

By ALFRED W. PERRY, M. D., San Francisco.

There are a host of serious gastric disorders which exist a long time unrecognized both by the patient and his physician, because they do not present the symptoms popularly believed to belong to them, viz., heartburn, sour liquid or gaseous eructations, vomiting, pressure-pain or tenderness at the epigastrium. I was once questioning a patient, who I was sure had a dilated stomach with stagnation and fermentation of its contents, if he ever had heartburn. He said no at first, and then said, occasionally, on stooping down. Now it is evident that in this case the cardiac sphincter of the stomach had sufficient tonicity to prevent the stomach contents being forced up into the throat until aided by the compression induced by stooping; so a decreasing tonicity of it allows successively heartburn, eructations and finally vomiting to take place, and conversely, an increased tonicity prevents these symptoms, in presence of a high degree of gastric fermentation. The feeling of weight or pain in the stomach caused by stagnation depends largely on the individual susceptibility, as also the pain of ulcer. Distension of the abdomen and the cardiac palpitation from the upward pressure of the diaphragm does not occur often in the young adult dyspeptics, and others with fairly developed abdominal walls.

For me the syndrome, of constipation, debility and loss of weight without fever or any weakening discharge, warrants in looking directly for a disorder of digestion.

In school children and young adults, especially clerks, I usually find this symptom group to indicate hyperchlorhydria, and I prove it sufficiently by their habits, to indicate a course of treatment; and

the usual results of the treatment confirm me in my diagnosis.

I found a great many children with the following history: They were perfectly well and properly developed for their ages until shortly after commencing school, when they showed the just-mentioned symptoms, with a poor appetite for breakfast. On analyzing their habits, I found that they ate their meals in a great hurry, in 5 or 10 minutes, perhaps. I tried to find out what this had to do with school life and this is the result: At different times during the past year, I stationed myself at the door of 3 large public schools (the Hamilton, the Emerson and the H. Durant) at 12:20 P. M., and counted the children returning from luncheon —a few children were already coming in, at 12:30 40% had returned, at 12:35 50% and at 12:40 75%—I counted over 700 children. This shows that the majority had remained at home to eat luncheon 10 or 12 minutes, allowing 10 minutes on the journey each way, and from this must be deducted a few minutes with some in waiting to be served.

The state law allows one hour for lunch, but the teachers require the pupils to return at 5 or 10 minutes before 1 P. M. The principal reason is that the children hurry back to play in the schoolyard, or gossip. The fast eating causes hyperchlorhydria, starchy indigestion, emaciation and anemia. The relation is as follows: Large pieces of food reaching the stomach stay therein a longer time than normal, as digestion takes place from the surface only of each piece; this longer stay in the stomach causes a continued secretion of gastric juice until the pieces of food are reduced to a size which will pass the pylorus; excessive liquids taken at meals dilute the gastric juice and still further prolong the stay of food in the stomach. This is stagnation and is the most serious derangement of the stomach, and is the most certain and frequent cause of constipation.

Pawlow found in his experiments on dogs with an accessory partitioned-off stomach, that gastric juice was secreted as long as food to be digested remained in the stomach; with large pieces of meat the juice was secreted the longest time.

Georges Hayem found in the stomachs of nurselings, one hour after taking milk, no free hydrochloric acid so rapidly had it combined with the finely divided milk. It has also been found that when a healthy man was given a meal of meat, finely chopped after cooking, that in one hour there was no free hydrochloric acid in the stomach.

How is it that natural gastric juice will irritate the walls of its proper container? We have some analogies to show it is possible: an infant is not excoriated by its urine if the napkin is changed soon; if allowed to remain all night many children are excoriated; frequent fecal passages irritate the anus of both infants and adults; incontinence of urine in adults (who have no trophic nerve change) often excoriates the skin. The gastric juice is extremely corrosive to living tissues, and the gastric lining has not an unlimited margin of resistance against these attacks when prolonged in time or altered in quality.

The cause being known, it would seem to be a simple task to remedy. But I have not found it so. The difficulties are: the intense desire of the child to play, which is not satisfied at home; for we are in the era of small families, which do not provide other playmates of the same family; the residence in flats and apartment-houses allows no suitable playground to meet the children of neighbors; the independent spirit of the children does not usually submit to parental control, as to the time of returning to school, or of the manner of eating or the kind of food. The directions I give to parents are, not to allow the children to return to school until 15 minutes of the legal school time (1 P. M.), and not to have water on the table and no soft breadstuffs of any kind. This advice is not usually followed unless the parents become alarmed as to the condition of their children.

Analysis of gastric contents is not available in diagnosis as the children do not seem sick enough for the parents to allow the use of the stomach tube. The prevalence of the same conditions in young clerks I attribute to the perpetuation of the bad habits acquired as school children and short time allowed for luncheon. Abandonment alone of fast eating, and all the helps to it, such as soft food, frequent drinks between the mouthsful of food, will usually entirely restore the health. Any and all fats are important adjuvants. The active malt preparations are also of great value in supplementing the defective action of the saliva on the breadstuffs. The good effects of the fats is an important point in favor of the diagnosis of hyperchlorhydria in this condition, as it is stated by all writers on gastric diseases that all fats decidedly reduce the acidity of the stomach and favor its evacuation into the intestines; the experience of all the old nations has established the use of fats with the starchy foods, viz., the bread and butter of Northern Europe, the olive oil and bread of Southern Europe, the ghee and rice of India.

In this condition it has long been known that peptonised milk, cream, olive oil, cod oil in emulsion and plain cod oil cause great improvement; the order in which I give them is that in which they are best tolerated by the stomach or the ideas of the patient; the good effects of cod oil in the anemia of children and youths was at first attributed to the iodine, and then to the small amount of extractives in it; later experience has shown that other fats, animal and vegetable, may fully replace it. The laity have come to know the good effects of the fats; I frequently have the parents of children ask if it is advisable to give oil to their children, or tell me they have been giving it. Many physicians are tempted on sight of an anemic child to order iron or bitter tonics; in my opinion, bitters are useless and iron preparations are positively injurious to the stomach.

PROGRESS OF PREVENTIVE MEDICINE.

By E. L. BLACKMUN, M. D., Stockton.

If we could measure the progress of the world, materially, in the development and advantages of steam, electricity, telephone and telegraphy and the mechanical appliances; sociologically in the great improvement in the conditions of life; intellectually in the diffusion of education; morally in a possibly higher standard of ethics, there is no one measure that would compare with the progress that has been made in preventive medicine. Nor that would compare in the alleviation of suffering, nor in producing social comfort and happiness to the state, families or individuals. In fact, without the progress that has been made in preventing diseases the world's progress of to-day would not be practical. For, with the intermingling of people, one with the other of countries, states and communities that this progress demands there could be nothing but a continual round of plague, pestilence and all kinds of communicable diseases. Indeed, such conditions did exist before the new conveniences of travel. For example, read the history of the plague and disease of London, which at that time could not be stamped out until the city was destroyed by fire.

Here is the greatest advancement of all the departments of medicine and is the secret of successful surgery. With the exception of quinine in malaria, anti-toxin in diphtheria and the hydrargyum and iodin compounds in lues, no great achievements have been made in the cure of diseases after once established.

For beyond these, where are our specific remedies? In our treatment of diseases, we have learned to let the disease take its course but to keep our patient, by a system of hygienic dietetics and a few nature aids from a scientific pharmacopeia, in the best possible condition to withstand the disease.

The beginning of what is known as preventive medicine was made about half a century ago, and was due largely to the revival of the study of micro-organisms, the discovery of which was made in the latter part of the seventeenth century. But their true relation to infectious diseases was not known until within the last three or four decades.

True that not all bacteria which we know exist as a causative factor in disease have been established and classified; however, a sufficient acquaintance with the biological activities of the uncellular micro-organism has been obtained to place modern hygiene in a prominence and importance now justly accorded to it. Through the study of bacteriology our knowledge of the causation, course and prevention of diseases is daily becoming more accurate, and it is needless to emphasize the importance of such knowledge in solving the many problems that present themselves to students of preventive medicine.

For example, the knowledge of the typhoid baccillus, its habitat and means of dissemination, places us in a position to so regulate our water and milk supply, to construct such a sewage system with disinfection of its contents as to make our large cities or other places where there is an assemblage of people, comparatively free from typhoid fever. The same practically applies to cholera and other enteric diseases.

By the aid of the microscope the plasmodium malaria is found in the blood of man, and is traced to the stomach of the enopheles mosquito which has feasted on his infected blood. Here generative changes are seen to take place, ovules and spermoids are found, fecundation occurs and the fertilized body sporulating ruptures, and discharges thousands of sporozites into the body cavity of the mosquito. A great many of these sporozites collect in the salivary glands of the mosquito, from which man may again be infected. And from practical experiments, it is quite certain that this is the only source of the infection of man with malaria. Thus, by avoiding contact with the inoculated mosquito, he may escape from one of the most common of the world-wide diseases.

No longer is an individual condemned to death because another of his family is afflicted with tuberculosis, provided he observes all the measures known in preventing that disease.

The obscurity that formerly surrounded the etiology of the deadly yellow fever, and its geographical distribution, has been explained in the mosquito, principally the stegomyia fasciata, which serves as an intermedial host for the microzoon of yellow fever, and with this knowledge Major Gorgas has stamped out yellow fever in Havana, when up to the year 1900 the deaths from this disease for 150 years amounted to hundreds, and even thousands, annually. This has occurred in an opportune time, for now the Panama canal may be dug without the depredations of this disease. But with the canal completed an avenue would be opened for the introduction of the disease into Asia. That yellow fever has been unknown in Manila, China and Japan is due to the fact that commerce has been conducted via the ports of British Columbia, California and Chili, all of which lie without the yellow fever zone. But with the opening of the canal, new conditions will have been established. The infected stegomyia that were not able to stand a journey in the hold of vessels via the Horn, might then be able by the direct route to reach Asiatic ports, and there infect native coolies engaged in unloading vessels, when the local stegomyia might become infected to spread the disease soon beyond the control among a crowded people living in an insanitary condition in a climate favoring its maintenance. With our present knowledge, however, this possibility is unlikely to occur.

These illustrations indicate a few among the many in the progress of preventive medicine. We will mention only the jennerian system in the prevention of smallpox, which practically annihilated that disease, anti-toxin in diphtheria and other serums too numerous to mention, some of them successful in producing immunity for a definite period

of time. Also the work being done by Wright of London in the Opsonic theory of immunity.

The role that insects other than the mosquito have in disseminating diseases, such as the house fly in typhoid fever and other enteric diseases, the common bedbug and flea in plague, the tsetze fly in sleeping sickness, and others, we will not take time to mention, is an additional armamentarium in our work. Especially can a large number of the summer diarrheas of children and many intestinal troubles of adults be avoided if there were a better screening of the houses and by limiting the number of breeding places of flies, such as the back-door garbage can and the manure pile about the barn.

The medical profession has been the full source of the scientific authority upon which preventive medicine is based, but it has become so intimately associated with public affairs that it is now a part of the government, international, national and state, and is thus designated state preventive medicine.

The third International American Conference met in Rio de Janeiro in the summer of 1906, with a view to securing such hygienic and sanitary conditions of all seaport towns that all endemic diseases be exterminated.

The national government has long been active in the examination of all individuals contained in approaching vessels, and the quarantine and disinfection of such when found infected. It also has special schools of instruction in hygiene and sanitary science for her army and navy officers and for special officers in this department.

Each state in the union has its health officer and state secretaries. Our own state officials are yearly becoming more interested in its public health. We have now some very good laws. For example, we mention the following: Those which prohibit the manufacture and sale of adulterated or misbranded food, drugs and liquors, and the controlling of morphin, cocain and other narcotics and poisons.

Rules and regulations which are intended to prevent the pollution in any manner of water, whether contained in streams, wells or springs, that may be used for domestic purposes.

Acts controlling the sanitary conditions of dairies and construction of buildings. Acts demanding the quarantine of Asiatic cholera, yellow fever, typhus fever, plague, smallpox, scarlet fever, diphtheria, membranous croup, measles, leprosy, anthrox and glanders, the reporting of the Manila, Cuban, Philippine adobe or kangaroo itch, chickenpox, erysipelas, pneumonia, unicinariasis or hook worm, cerebro-spinal meningitis, trachoma, whooping cough, mumps, dengue, dysentery, tuberculosis of respiratory tract, typhoid fever and any disease that may become epidemic.

Another section of this act is that no instructor, teacher or pupil affected with any of this list of diseases or who resides in any house, building or structure or other place where such disease exists or has recently existed shall be permitted to attend school except by the written permission of the local health officer.

This is a very brief review of the progress and our present position in preventing diseases, but let us now consider their efficiency and present outlook. The laws that we have would offer very good control if they were enforced. Medical men have been the necessary organizers, and remain the natural counselors and directors of the system of health legislation. And this service has been largely a labor of love, which they have offered freely as a gift to the people.

There is a weakness, however, in that the labor has been individual rather than corporate, that there has been a lack of organization among the profession, both in causing the enactment of laws and applying the power of them after they are enacted.

Every county should have a health officer, who should be a physician, one who had made a special study of hygiene and sanitary conditions, with a familiarity with the trans-communicable diseases. He should be provided with a well-equipped laboratory, and be able to make bacteriological, pathological and chemical examinations as might be required of him. His duty would be to attend to the public health and act as a free consultant with the other local health officers and physicians of the county, and be in constant communication with the health officers of the state.

There should be more precaution in observing the law in children's diseases, especially when school is in session. Complete isolation and disinfection should be practised and for a sufficient period of time. Although measles, whooping cough and mumps are considered mild diseases, it is safe to say that more deaths result from any one of these diseases in one month than from smallpox in one year in the United States. The idea that children must have these diseases some time in their youth is folly in the extreme. With the instruction of parents of the seriousness of these diseases and with isolation of infected children and disinfection, these diseases can and will be stamped out. If at any time during the life of an individual his health should be guarded, it is during childhood, upon which the health of the adult depends.

In England they have become more strict in regard to communicable diseases. Among schools and colleges the following period of isolation must be observed—first, in respect to time after exposure:

Smallpox, 18 days.
Chickenpox, 18 days.
Scarlet fever, 14 days.
Diphtheria, 12 days.
Measles, 16 days.
Whooping Cough, 21 days.
Rothelm, 16 days.
Mumps, 24 days.

Second, The earliest day for lifting quarantine: Smallpox when all scabs have fallen off; chickenpox, when all scabs have fallen off; scarlet fever, 6 weeks, and then only if no desquamation; diphtheria 3 weeks if convalescence is complete and no sore throat, albuminuria or discharges remain, and no bacillus of diphtheria present; measles, 3 weeks

if all desquamation and cough have ceased. Whooping cough, 6 weeks from commencement of the whooping, if the characteristic spasmodic cough and whooping have ceased. Rothelm, 2 or 3 weeks, according to the nature of the case. Mumps, 4 weeks, if all swelling has subsided.

In diseases such as ophthalmia, impetigo, ringworm or scabies, exclusion is carried out until recovery is complete. Upon the introduction of these laws in London requiring notification of communicable diseases, the isolation of the patient and the disinfection of the house at the termination of the disease, a decrease of 30% in the death rate from zymotic diseases was noted in the first decade.

Beyond the diseases of children those which concern us the most in the San Joaquin Valley are pneumonia, tuberculosis and malaria.

The fact that pneumonia generally develops sporadically and that direct transmission from case to case is comparatively rare has made the attitude of the profession toward the control of this disease somewhat passive. True, that the immediate sources of infection are at present usually not discernible, yet we recognize and see more clearly, day by day, that in bacterial diseases those sick with infectious diseases constitute the supremely important sources of dissemination of those diseases. Therefore, in this disease we must use the general principles of preventive medicine by the disinfection of all sputum and possibly other excreta from the patient, also the fumigation of the sick room and articles contained therein. The latter is essential, for in pneumonia the sputum is so voluminous that it is almost impossible to prevent entirely the soiling of the room and articles contained in it. There are also reports from hospitals using ordinary precaution where epidemics of pneumonia have occurred by omitting this procedure, and the disease could not seemingly be stamped out until the ward was thoroughly disinfected. I need only to mention Tonopah and other epidemics in the west to emphasize the importance of more activity in preventing pneumonia.

In addition, the new section to the penal code, prohibiting the discharge of any mucus from nose or mouth, or expectorating upon any sidewalk, public street or highway, public building, railroad train, etc., will also be useful.

More important is the reporting of every case of pulmonary tuberculosis to the health officer whose duty it would be to attend to the disinfection of the house which contained the afflicted one upon his removal or death.

The duty of every physician is to arrive at an early diagnosis, making repeated microscopic examinations of sputum, and when the tubercular bacillus is found, show the same to the patient and let him estimate the number of germs in a drop of sputum. Inform him of the nature of the disease and how he may infect others, especially those of his own family, and then encourage the patient by telling him that if he will follow instructions he has a good chance of getting well. He will appreciate you the more for telling him the knowledge he is seeking, the cause of his trouble, and he will be in a better position by knowing how to serve himself and others.

In the long list of communicable diseases that is required to be quarantined or reported by the state, we find no mention of malaria. That malaria is prevalent in the San Joaquin Valley during the summer months is true. Happily it is usually of mild character, yet the money spent annually for the cure of this disease is considerable. The cost of time lost to labor, a few doses of quinine, and the trip to the mountains or coast, would soon make several fortunes. This fact, with the amount of suffering it entails in both the acute and chronic attacks, and our desire to make absolute denial that the disease exists in this vicinity, should be a great incentive to take steps in its prevention.

There are three well recognized courses now open to us in preventing this disease, namely:

1st. The extermination of the enopheles mosquito. 2d. The prevention of mosquitoes infecting man, and vice versa, by the use of mosquito-proof houses, and other measures. 3d. The systematic destruction of the parasite in man.

The first has been accomplished to some extent in our towns and cities by drainage for ordinary sanitary purposes, thus depriving the mosquitoes of their breeding places. But when water is used for irrigating purposes, this method is impracticable. Crude oil has been used successfully to destroy the larvæ in streams and other bodies of water, but this is not an economical procedure, when other objections are absent, such as interference with food and water supply of the people.

A large class of our people by necessity live in houses protected with screens which protect them from the mosquito in a large measure. However, a number of people during the hot summer months sleep in tents or in the open, with no protection whatever, and some, by the nature of their work, are more or less exposed, especially if they have night work, the mosquito being more active at night than during the day. It is among these classes that malarial fever most often exists.

Most of the laity and some of the physicians believe that malaria exists in the air or water, but when they can be convinced to the contrary and be made to see the role that the mosquito has in transmitting this disease, then there will be no trouble in the majority of the people avoiding the infected mosquito. This instruction must come from the state and the physicians.

The third course in preventing malaria is the most important, the destruction of the parasite in man. For this not only cures the patient but prevents the further infection of the enopheles mosquito, and with no infected mosquito, the source of supply would be cut off to man. The bite of the uninfected mosquito can not produce malaria.

A few doses of quinine and a trip to the coast do not always cure, but may leave a chronic condition with plenty of malarial parasites in the blood, left

over to infect the enopheles the following year. That the patient has no more chills and fever is no indication that he is rid of the disease, for it has been calculated that there must be at least 250,000,000 parasites present in the blood of patients to produce an attack of chills and fever. Just how long the parasites will remain in the system without producing untoward symtoms is not known, but that they do remain if not totally destroyed, and may produce a relapse, there is sufficient proof. This explains how malaria may occur in the winter months and in regions where there are no enopheles mosquitoes.

Dr. Albert Woldert, of Texas, advocates the following method of procedure, which, in part, has been used successfully by Koch on a large scale in Java and German New Guinea, also in German East Africa and Fernando in the malaria districts of Ceylon. Being a preventable and highly inoculable disease, boards of health should make it compulsory on the part of physicians to report all cases of malarial fever.

The laity must be educated so that each person who has malarial fever will fully understand just how he becomes a menace to his neighbors, and who by this means will not rebel against the restrictions imposed upon him. Health officers should insist that all instructions given by them be carried out to the letter. Proper penalties should be provided. Every case of malarial fever should be protected by means of a close-fitting mosquito netting, especially at night time. The enopheles seldom bites during the day time. In this way the malaria-carrying mosquito could not become infected and would be harmless. In the case of those who have the disease the parasite should be attacked by a systematic treatment of quinine, microscopic examinations of the blood should be made every week or two, and the quinine continued until all parasites are gone, or persist in giving a round of quinine once or twice a month for several months after chills and fever.

In this way these cases which now go through the winter and relapse will be prevented. A close surveillance should be kept over new arrivals from districts in which the disease prevails, in order that fresh importations may be prevented. This would necessarily place a great deal of labor and expense upon the state, but if by combating malarial fever by this or some better method, the disease could be stamped out of California, she would not be without her reward.

In conclusion, it is safe to infer that our work in preventive medicine is yet far from being accomplished, and I will only mention a few instances where the work is sadly in need:

The prevention of cancer, its source being yet unsolved, limiting the venereal diseases and insanity, all of which by reports are seemingly increasing in our country, and last, but not least, for the sake of suffering humanity, do set a limit to the self-diagnozing, self-prescribing and counter-prescribing of patent dope which floods our markets.

COOPER COLLEGE SCIENCE CLUB

The Diagnosis of Certain Forms of Appendicitis.

By S. HYMAN, M. D., San Francisco.

1. Acute perforative appendicitis with abscess and pus in the general peritoneal cavity, but no diffuse peritonitis. This is a form of appendicitis that I have seen diagnosed at operation over and over again, by men who are competent surgeons, as acute appendicitis with diffuse peritonitis.

Anatomically we have an acute, usually perforative appendicitis with a walled-off abscess, the rest of the belly being filled with a thin opaque pus which wells out when the abdomen is opened. The peritoneum covering the intestine and the parietes is smooth and glistening and shows nothing of an inflammatory nature. The parietal peritoneum, examined microscopically, shows very slight, if any, inflammatory changes. There is in no sense of the word a diffuse peritonitis. The pus smells of the products of b. colli and is frequently sterile in culture, and so far as my experience goes, is more often so than not. The organism most often recovered is b. colli. The reason for this exudation, I do not know, but it is evident, from the absence of reaction on the part of the peritoneum that it comes from the external surface, as it were, of the abscess-wall faster than it can be taken care of by the remaining healthy peritoneum.

Clinically, it differs from acute appendicitis with diffuse peritonitis in that there is little, if any, rigidity, spasm and tenderness away from the right iliac fossa and general symptoms of peritonitis; the facies, sweating, tongue, pulse and marked meteorism are wanting. The free fluid in the belly cavity can be easily recognized by attempting to elicit the usual signs of fluid; movable dullness, fluid wave may be present but is rarely so, and a distinct soft bulging to be felt by rectum and vagina. The real reason that this condition is not frequently diagnosed in cases when it is present is due to the fact that the physician examining the patient has neglected to look for the indicative signs.

The condition having been recognized, either clinically or at the operating-table, the surgeon should treat it accordingly. Remove the appendix, drain the abscess cavity and refrain from damaging good, healthy, normal peritoneum by sponging out this purulent fluid. The source of infection removed, the undamaged peritoneum will easily, and in my experience of over 700 cases of all forms of appendicitis, always take care of this fluid, provided it has not been damaged by surgical manipulation.

2. Acute appendicitis with portal thrombosis—3 cases—and diagnosed. All three cases were similar. There was a history of, and the signs of acute appendicitis, accompanied by chills, septic fever, an enlarged liver and jaundice. The jaundice differed from the slight icterus so commonly seen in cases of appendicitis in that there was a definite icteric coloring of the skin, as well as a yellow color of the conjunctivae. So far as I can recall, these are the only cases of appendicitis

I have seen with a definite history of shaking chills, occurring at irregular intervals. I have no records to bear me out in this statement, but so far as my memory serves me, it is correct. I can state positively, however, that these cases are the only ones in which there was, before operation, a definite chill while the patient was under observation in the hospital or at home. In the case diagnosed, there was also hepatic tenderness. Postmortem showed a mural thrombus of the purulent type in the portal vein and miliary liver abscesses. The mesenteriolum of the appendix was gangrenous, but the infection could not be traced anatomically from it to the portal thrombus. All these cases were fatal, with autopsy.

3. Acute appendicitis with abscess between the appendix and a cap of omentum—3 cases—of which the last two were diagnosed. This condition, I imagine, can be diagnosed only while the condition is simple, as what follows will show.

Anatomically, we have an appendix which does not dip into the pelvis, perforated near the tip; and the result—an abscess walled off from the general peritoneal cavity by a cap of omentum, much as a thimble fits the end of the finger.

Up to a certain stage, it is clear that the inflammatory process has not yet reached the parietal surface of the omentum, and, therefore, has not yet involved the peritoneum. From this it follows that there can be no adhesions between the omentum and the abdominal wall. We have, then, in the anatomical picture, a clearly logical explanation for our clinical signs. The patient presents with what is clearly acute appendicitis, showing, however, very little tenderness on pressure in the right iliac region, and almost no, if any, muscle spasm. The last case I examined had absolutely no muscle spasm, showing a perfectly free parietal peritoneum. In the region of the appendix is a definite, small mass, usually 5 to 8 c. m. in diameter, felt through the abdominal wall. This mass, within narrow limits, is freely movable. From what I said above, concerning the pathological anatomy, it is plain that the movable mass is the appendix, with its abscess and omental wall, which last, not being adherent to the parietes, allows free movement within certain limits. Palpation per rectum or vagina reveals no mass or other inflammatory sign.

If one is able to make the diagnosis of this condition he can give the family an extremely good prognosis as it is possible, as I did in my last case, to remove the appendix, and by resecting beyond the involved area, to remove the abscess in toto and close without drainage.

Although this form deserves no special place in our classification of appendicitis, still the fact that we can accurately diagnose the anatomical condition makes this worthy of note. I have never seen the diagnosis of this form mentioned in the literature, and as I have been able to diagnose the last two cases seen I thought it worth while to bring it to your notice.

Discussion.

Dr. Stillman: In regard to the first condition mentioned, the cases where there is a large collection in the pelvis and sometimes in both flanks, of sterile fluid without odor, the question comes up whether it should be left or whether it should be sponged out. It used to be washed out and later sponged out, and now the idea is to leave it alone. I am thoroughly in accord with that technic which interferes with the surface of the peritoneum, either visceral or parietal, as little as possible, but my experience covers a number of these cases, and I have seen a number in which this substance subsequently became septic. Whether sponging it will help or not is another thing. I prefer, however, in such cases, to sponge out this fluid, but with no unnecessary manipulation, and to close without drainage. I prefer not to add insult to injury of the peritoneum by using the drain. The only case where I put in a drain is where there has been an abscess and where there is a localized collection.

The second condition brought up of thrombus of the portal vein, I have never seen. I know that it is one of the complications. The third condition of abscess between the appendix and the cap of adherent omentum I have seen, and I congratulate the doctor on removing the abscess with the appendix and the surrounding omentum. I think that his observation in the matter of diagnosis is based on the teaching that visceral peritoneum is not sensitive even when inflamed, which I think is practically disproved by the teachings of somebody subsequent. These experiments under cocain anesthesia and cocain seem to have the effect, even taken by mouth, of destroying the sensibility of the visceral peritoneum, and when the same experiments are tried on animals without cocain, these animals have evinced the greatest pain when the visceral peritoneum was touched. I suppose that the doctor's point that no tenderness is found in these cases is due, not to the fact that the parietal peritoneum is not involved, but that these appendices are pretty well buried in a large mass of exudate and omentum. I have succeeded in doing the same thing in some chronic cases, chronic abscesses in old men where the omentum constituted a hard, immovable mass which even suggested malignancy, and in which I have succeeded in removing the hard, firmly-attached cicatricial omentum, together with the appendix. I think that if that can be done oftener, it would be all right. I question very much whether the circumstances generally will permit of this in acute cases, or of the removal of such a large abscess in toto, as Dr. Hymen succeeded in doing. Personally, in these cases, I prefer to evacute the abscess in the usual way, and then, if it be not too large, wash out its cavity and remove the appendix and injected omentum separately and use a drain.

Dr. Morton Gibbons reported a case of cirrhosis of the liver with the following history:

Patient, male; 55 years of age. Family history of heart disease, but long lived. Childhood history negative. Previous history, at 16 years of age had several attacks of appendicitis, peritonitis, and from that time was never robust. Always subject to discomfort in region of appendix, and digestion was easily deranged. Five years ago had acute attack of appendicitis, of a diffuse character. Operation was postponed until it became apparent that death would result without it. Laparotomy showed numerous adhesions in region of appendix and up the right side to the liver. Inflammation was external. The patient nearly died on the table, wound was not closed, but finally closed by granulation. Patient experienced a protracted convalescence. Since that time patient was a neurasthenic, subject to oc-

casional attacks of nervousness, with depression and distress referable to the heart. In these attacks he felt as though he were about to die. There was a constant discomfort in the right side, with several minor attacks of inflammation. This discomfort gradually grew less. On several occasions blood was passed in the urine and there were some emissions, blood-stained. A small uric acid stone was passed. The heart showed evidence of a mild myocarditis, there was a mitral stenotic murmur. The urine showed evidence of interstitial kidney changes. The prostate did not seem to be abnormal. Seven months ago, while in ordinary health, suddenly collapsed, and upon recovering sufficiently to visit the toilet passed per rectum a large amount of bright blood. (He gave a history of having had tarry stools for three or four days. There was evidence of blood in the stools for several days.

The patient made a slow recovery from this, gained weight and strength but was weaker and less robust than before the hemorrhage. Four months later, three months ago, patient overexerted himself and became excited during an argument and felt a sinking feeling similar to previous time. He finally fainted, and was later able to reach home by car. The following day, feeling much better, he ate a full meal and in a half hour was seized again with a great depression and quickly vomited bright red blood. During the following six hours he lost two quarts. The bowels later showed small tarry passages. Blood soon disappeared in the stools and the patient gained rapidly. In three months he gained more than thirty pounds, and felt in every way better than before the first hemorrhage. Examination had revealed from time to time slightly yellowish eye-balls, normal lungs, enlarged heart with mitral diastolic murmur, low specific gravity urine with a few casts and some pus cells. Liver smaller than normal and spleen extending 1½ inches beyond costal border. Abdominal wall was fat, abdomen was sensitive, though not markedly so in the right iliac region. On February 24th, 1908, patient had not been feeling well, having been confined to bed with a slight bronchitis, when the old feeling of prostration developed. Almost immediately he vomited a quart of blood, and a few minutes later the bowels moved, resulting in a tarry stool. During the next fifteen hours there were four vomiting spells and 2½ quarts of blood were voided. The bowels moved once again with 9 oz. of liquid blackish blood. Eighteen hours after the onset the patient complained of very severe abdominal pain and failed rapidly in strength, and died evidently of internal hemorrhage.

Dr. Walter Gibbons reported the following pathological findings in this case:

The patient was a well-developed man, well nourished, of 53 years. Face tinged slightly yellow. Livori over the back and buttocks. Scar over McBurney's point 5 inches long and half an inch wide. Muscle seems not to be united under the scar. Incision made in the median line from the supersternal notch to the symphysis pubis. The subcutaneous fat well developed about one-half inch thick over the abdomen. Muscular layer of abdomen well developed. Great amount of fat in the omentum. The loops of the bowels are distended with gas. The peritoneum is moist and glistening. No fluid in peritoneal cavity. The cecum is adherent at the side of the laparotomy wound. Lower border of liver extends to the sixth rib in the mammary line. The consistency very much increased. Pericardium contains about 1 oz. of slightly blood-stained fluid. The layers of the pericardium adherent by easily broken adhesions over the front and posterior portion of the heart. The parietal pericardium is slightly opaque and covered with fibrin. The heart is about 1½ normal size. The muscle, left side, is hypertrophied about 12 m., thick consistency, rather hard. Muscle on the right side slightly thickened and shows fatty infiltration toward the apex of the heart. Both auricles are slightly dilated and show post-mortem clots. Post-mortem clots in the pulmonary artery. Valves on the right side are apparently normal. Slight atheromatous thickening at the base of the aortic valve and small atheromatous patches at the beginning of the aorta. Mitral valves much thickened, hard in consistency, atheromatous at bases and the aortic opening is decidedly stenotic. Left plural cavity is empty, pleura is moist and glistening, no adhesions. Left lung normal in size, no scar at the apex. Upper lobe shows emphysema. The lower lobe consistency increased, cut surface shows hyperemia and oedema. Bronchi are filled with blood-tinged mucus. The right lung same condition. There are strong adhesions of the transverse colon, of the ascending colon, loops of the small bowels, to the abdominal wall, to the liver, to the omentum and to the stomach. One loop of the small bowel is adherent to the bladder. The spleen is enlarged, 16x9x5. The surface is steel-colored, the capsule is much thickened and the consistency increased. Cut surface is dark red. Malpighian bodies are very indefinite. Connective tissue markedly increased. Trabeculae are prominent. Left adrenal apparently normal. The capsule strips easily. Surface finely granular. Left kidney shows coarse fetal lobulations. Cut surface shows hyperemia. The cortex is narrow. The right kidney in the same condition, with the addition that the calixes are much dilated, the pyramids shortened almost even with the cortex. The pelvis of the kidney is markedly dilated toward the lower pole. The prostate is slightly enlarged, both lobes show a marked cystic condition, the cysts varying from minute size to that of a pea. They contain a choloid-like material. Mucous membrane of the bladder is thickened and hyperemic. Mucous membrane of the rectum is quite thick, very much congested, very dark red, dark brownish fluid blood in the rectum. Stomach is dilated. It contains about two liters of dark brown fluid blood. The mucous membrane is much thickened and shows marked passive congestion. Pylorus is slightly stenotic. No ulcerations, no tumors in the wall, no evidence of bleeding vessel. Aesophagus membrane very hyperemic, contains dark bloody fluid. Veins in the wall are very much dilated. No bleeding point detected. The liver is contracted to about ¾ normal size, very hard. The surface is coarsely granular, yellowish brown in color. Shows much increase in connective tissue. Cut surface shows the lobules to be almost entirely surrounded by pads of connective tissue, which separate the liver tissue into islands. The gall bladder is filled with a dark brown bile, the bile duct is open. Duodenum mucous membrane is hyperemic, filled with dark granular, partly digested blood. The mucous membrane of the ilium is filled with fluid like blood. The mucous membrane is thickened and contains numerous small hemorrhages. The appendix has been removed.

Anatomical Diagnosis: Old laparotomy wound. Adhesions of the ascending and transverse colon, with the omentum, liver, stomach and small bowels. Loop of the small bowels adherent to bladder. Annular cirrhosis of the liver. Chronic spenitis. Granular atrophy of the kidney. Old adhesive pericarditis mitral stenosis. Hypertrophy of the left ventricle. Atheroma of the aorta. Fatty infiltration of the right ventricle. Chronic hemorrhagic mastitis and colitis. Passive congestion of the intestines. Cyst adenoma of the prostate. Vericosity of the veins of the aesophagus.

Microscopical Findings: Heart muscle. Left side muscle cells show hypertrophy. Right side muscle cells atrophied, some fatty droplets between muscle cells under pericardium. Liver. The peri-

portal connective tissue is markedly increased so as to form thick bands, which entirely wall off the liver lobules. The connective tissue is quite cellular, infiltrated with lymphocyles and new-formed connective tissue cells. It contains numerous new-formed bile ducts and veins with thick walls. The liver cells show atrophy near the periphery of the lobules, but toward the center they are markedly hypertrophied. There are numerous fat droplets in liver cells within centers and periphery of lobules. Kidney. Considerable diffuse increase in connective tissue under the capsule, which is thickened, are small areas in which the connective tissue is much increased, the tubules atrophied and in which the glomerulae show byaline degeneration and the arteries are sclerotic. The tissues between these areas are comparatively normal. Another section of kidney shows the same condition but less marked. Spleen. This shows a marked thickening of the capsule and trabeculae and sclerosis of the arteries, and the pulp is markedly indurated with new-formed connective tissue. The venous sinuses are engorged with blood and the Malpighian bodies small. Prostate, shows a marked dilatation of the glands into the small cysts with very irregular walls, which are lined with one row of low epithelial cells and filled with a homogeneous substance, which stains deep purple with hemotoxyln and light brown with Van Gieson.

The autopsy findings of this case of severe cirrhosis of the liver, with its sequelae, are of interest taken in conjunction with the history and the fact that they developed in a man of exemplary habits, who did not use alcohol, was very careful in his diet, had no syphilitic history and no history of the use of drugs, or of poisoning by lead nor of gout, which are commonly considered the causes of cirrhosis. This seems to be a case which is caused directly from disorder of the intestinal tract. The history of appendicitis followed by a subacute peritonitis, with marked intestinal disorders following, due probably to the adhesions of the intestinal tract with their consequent inability to perform their function properly, seem to be sufficient causes for the symptoms produced. It has been found experimentally that acetic acid, lactic and buteric acids injected into animals will set up a cirrhosis of the liver. It would appear, therefore, that alcohol in itself may not neeessarily be the cause of cirrhosis of the liver, and probably the effect of alcohol to derange the digestion in the intestines with the effect that toxic substances are produced directly causes the cirrhosis of the liver. The history of hemorrhages in this case is interesting when it is considered that no definite point of bleeding could be made out at autopsy. It seems to be one of those cases of arenchymatous intestinal hemorrhage described by Reichard, in which the bleeding takes place from a large blood vessel or there is an oozing from a part or the whole of the intestinal tract due to impeded circulation through the liver.

Discussion.

Dr. Hirschfelder: This is a very interesting case, not only from the clinical but also from the pathological side. The etiology of cirrhosis of the liver is a long-disputed point. It is a matter of doubt whether the alcohol or the other ingredients of alcoholic drinks are the real cause of cirrhosis. On the other hand, pepper and other spices, as well as the various products of intestinal decomposition, may give rise to the disease. The fact that a man has not admitted to the use of alcohol would not prove that the cirrhosis was not due to alcohol because much would depend upon the condition of the stomach when the alcohol reached it. A man might take a small quantity of alcohol in the shape of a cocktail on an empty stomach and do the mischief. Or he might take a great deal of alcohol only once, and thus have cirrhosis of the liver. The next point of interest is the intestinal hemorrhage. It is quite probable that in this case the venous stasis produced by the mitral stenosis was added to that occasioned in the intestinal tract by the cirrhosis of the liver. It is very difficult for us to form a picture from post-mortem examination of what takes place during life. I do not suppose any of us have imagination sufficient to picture the intestinal tract in cases of cirrhosis of the liver. I am sure I cannot call up any picture which corresponds to the facts. I have no doubt there is congestion of the tissues, which is greater than we think probable and that under such conditions hemorrhage similar to that of nosebleed may occur.

Dr. I. W. Thorne: The production of cirrhosis of the liver in non-alcoholic men I know to be a fact, for I have seen several non-alcoholics who have lived the so-called ideal life with one exception and that is that they were inordinate eaters. They did not drink, but they would eat whenever they could. I really think that the overuse of food has just as much to do with cirrhotic liver as any other etiologic factor. These men in the country who do not go to town for more than once in three or four months make it a habit of having immensely abundant tables at their homes, and when they come to town the first place they go is to a good restaurant. I remember two cases who had practically the same history as these cases, both having had hemorrhages and both having had cirrhosis of the liver and dying.

Dr. Morton Gibbons: An interesting point in this case was in trying to foretell these hemorrhages. After he had had two hemorrhages, I realized that one of them would probably be the last. Before the time of the first hemorrhage he had been in the country traveling on business. He noticed that while feeling well, for two or three days before the attack there was an oily taste in the mouth and slight gastric discomfort. Probably there was some hemorrhage going on at that time. Before the second attack he fainted in his office and was taken home. It was twenty-four hours before the hemorrhage was manifest. Before the third attack he was sick in bed with bronchitis for three days before the hemorrhage. Twenty-four hours before the hemorrhage he had this same sinking feeling. The blood in the passages stopped very quickly after the first two hemorrhages. All occult blood was absent in three or four days. I did not make any tests, although I believe there must have been blood there before the hemorrhage became visible.

ADDITION TO NEW REMEDIES.

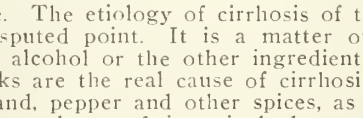
The following article was added to the list of new and non-official remedies approved by the Council on Pharmacy and Chemistry:

Dry Peptonoids (Soluble). Arlington Chem. Co.

NEW AND NON-OFFICIAL REMEDIES.

(Continued from May.)

THEOBROMINE.



Theobromine, $C_7H_8O_2N_4$, is a base occurring in Theobroma caeao, Kola acuminata, etc., and also made synthetically.

Actions and Uses.—Its uses are similar to caffeine, but it has relatively greater diuretic, cardiac and muscular aetivity. It does not act so powerfully on the central nervous system. It is recommended as a diuretic. The great obstacle to its use has been its insolubility and the consequent uncertainty of the degree of its absorption. It is liable to produce gastric disturbances. Dosage.—0.35 to 0.5 Gm. (5 to 8 grains).

THEOBROMINE SODIUM SALICYLATE.

Theobromine sodium salicylate, $NaC_7H_7N_4O_2 + NaC_7H_5O_3$, is a double salt of theobromine-sodium and sodium salicylate.

Actions and Uses.—Its effects are the same as those of theobromine (which see), over which it has the advantage of greater solubility. Dosage.—1 Gm. (15 grains) five or six times a day. Its tendency to produce gastric irritation may be prevented by giving it in well-diluted solution, or, if preferred, in capsules or wafers, followed by water.

THEOCIN.

A name applied to synthetic theophyllin (see Theophyllin). Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

THEOPHYLLIN.

Theophyllin, $\begin{matrix} N(CH_3).CO \\ | \\ CO.N(CH_3) \end{matrix} \begin{matrix} C.NH \\ || \\ C.N \end{matrix} CH = C_7H_8C_2N_4$, is an organic base isomeric with theobromine; it is found in small amounts in tea and is also made synthetically.

Actions and Uses.—Theophyllin is a powerful diuretic, claimed to surpass all other remedies of this kind, increasing not only the amount of liquid, but the solids in the urine as well, the secretion of urine being sometimes very copious. The diuretic effect, however, is not prolonged and its administration is, therefore, advantageously followed by one of the theobromine derivatives having a weaker, but more persistent, action. It occasionally produces gastric disturbances and renal irritation has also been reported. It is claimed that these may be obviated by the use of acettheocin-sodium (which see) instead. It is recommended in cardiac affections, nephritis, dropsy, etc. Dosage.—0.2 to 0.35 Gm. (3 to 5 grains) in warm tea.

THERMODIN.

Thermodin, $C_6H_4(OC_2H_5).(N(COOC_2H_5)(CH_3CO) = C_{14}H_{19}O_3N$, is a compound of acetphenetidin (phenacetin) and ethyl carbamate (urethane).

Actions and Uses.—Thermodin is an analgesic, antipyretic and antiseptic. It is recommended as a mild and reliable antipyretic in typhoid fever, pneumonia, influenza, tuberculosis and febrile conditions in general, and is said to be free from unpleasant by effects. Dosage.—0.3 to 0.6 Gm. (5 to 10 grains) as an antipyretic; 1 to 1.3 Gm. (15 to 20 grains) as an analgesic. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

THIOCOL.

Thiocol, $C_6H_3(OH)(OCH_3)(KSO_3)$ 1:2:6 = $C_7H_7O_4KS$, is the potassium salt of ortho-guaiacol sulphonic acid.

Actions and Uses.—Thiocol is said to be non-irritating to the mucous membranes of the digestive tract, readily absorbed and is claimed to promote appetite and improve nutrition. It is recommended in pulmonary tuberculosis, acute and chronic bronchitis, pneumonia, whooping cough, emphysema of the lungs, etc., as a means of relieving expectoration, diminishing night sweats and improving nutrition. Dosage.—0.3 to 1.3 Gm. (5 to 20 grains), in solution with orange syrup or in tablets. Manufactured by F. Hoffmann LaRoche & Cie, Basel, Switzerland (The Hoffmann LaRoche Chemical Works, New York).

TONOLS.

Tonol is a name applied by E. Schering to identify the glycerophosphates of his manufacture.

Action, Uses and Dosage.—These are described under glycerophosphates (which see). Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

THIOSINAMINE.

Thiosinamine, $(NH_2).CS.NHCH_2.CH:CH_2 = C_4H_8N_2S$, is a condensation product of allyl thiocyanate and ammonia.

Actions and Uses.—Thiosinamine appears to cause or quicken the absorption of exudates, lymphatic swellings, scar tissue, etc., the action being unexplained. The opinions as to value are contradictory. It is recommended for use by hypodermic injection in lupus, chronic glandular tumors, cicatrices, etc. By the mouth in stricture, corneal opacity, chronic deafness. Dosage.—0.03 to 0.1 Gm. ($\frac{1}{2}$ to $1\frac{1}{2}$ grains) in capsules or tablet triturates; in subcutaneous injections, 0.05 to 0.2 Gm. (1 to 5 grains) in 15 per cent alcoholic or 10 per cent glycerinated water solution.

TRIFERRIN.

Triferrin is ferric paranucleinate; a compound of caseinparanucleinic acid with iron, containing 22 per cent of iron, 9 per cent of nitrogen and 2.5 per cent of phosphorus in natural (organic) combination.

Actions and Uses.—In addition to its hematinic action derived from the iron, it is claimed to act like lecithin by reason of the phosphorus in organic combination which it contains. It is said to agree with the most sensitive stomach, since it passes the stomach unchanged, but is freely absorbed in the intestines. It is recommended in anemia, chlorosis, neurasthenia, rachitis and general debility. Dosage.—0.3 Gm. (5 grains) in powder, taken during meals. Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York.

TRIFERROL.

Triferrol is an elixir of triferrin, containing 0.05 Gm. (1 grain) triferrin and about 1 Cc. (15 minims) of alcohol in 4 Cc. (1 fluidram).

Actions and Uses.—It is introduced as a convenient substitute for triferrin. Dosage.—16 Cc. (4 fluidrams) corresponding to 0.24 Gm. (4 grains) of the powder. Manufactured by Knoll & Co. Ludwigshafen a. Rh. and New York.

TRIKRESOL.

A liquid said to consist of 35 per cent orthocresol, 40 per cent metacresol and 25 per cent paracresol. It closely corresponds to Cresol, U. S. P. Manufactured by the Chemische Fabrik auf Actien, vorm. E. Elberfeld, Germany (Continental Color & Chemical Co., New York).

TRIONAL.

A name applied to Sulphonethylmethanum, U. S. P. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

TRIOXYMETHYLENE.

Trioxymethylene, $(CH_2O)_x$, is a polymeric condensation of formaldehyde.

Actions and Uses.—Antiseptic and escharotic. It is recommended internally for diarrhea. Externally it is used chiefly to generate formaldehyde by heating, for disinfection, for inhalations in phthisis and coryza. It is also recommended for warts. Dosage.—Internally, 0.3 to 1 Gm. (5 to 15 grains); externally (for warts), in 10 per cent suspension in collodion. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

TRITIPALM.

A fluid extract, each 4 Cc. (one fluidram) of which is said to represent: Fresh saw palmetto 2 Gm. (30 grains) and triticum repens 4 Gm. (60 grains) in a menstruum containing 20 per cent of alcohol. Dosage.—4 to 8 Cc. (1 to 2 fluidrams) four times a day, preferably with water. Prepared by F. Stearns & Co., Detroit, Mich.

CHANGE OF ADDRESS.

Armstrong, Jno. M., from 416 Byrne Blk., to 2915 Pasadena ave., Los Angeles.

Allen, Chas. L., from 25 Euclid ave., Pasadena, to San Fernando Bldg., Los Angeles.

Brown, Newell, J., Jr., from 131 West 22d st., Los

Angeles, to Stagg, P. O. Box 14, San Bernardino Co., Cal.

Brown, Newbern, N., from 131 22d st., Los Angeles, to Bakersfield, Kern Co.

Barber, David C., from 253 Broadway, Los Angeles, to Security Bldg., Los Angeles.

Barlow, W. Jarvis, from 328 Wilcox Bldg., to Security Bldg., Los Angeles.

Beckett, Wesley W., from Conservative Life Bldg., to Pacific Mutual Bldg., Los Angeles.

Bewley, Marietta H., from 916-17 Union Trust Bldg., to Auditorium Bldg., Los Angeles.

Brainerd, Henry G., from Conservative Life Bldg., to Pacific Mutual Bldg., Los Angeles.

Bresee, Paul, from Conservative Life Bldg., to Lissner Bldg., Los Angeles.

Berry, Andrew J., from Copp Bldg., Los Angeles, to Bumiller Bldg., Los Angeles.

Barton, H. P., from 1301 So. Hope, to 447 So. Olive st., Los Angeles.

Bennett, Laura B., from San Pedro, to W. H. Hellman Bldg., Los Angeles.

Bridge, Norman, from 217 So. Broadway, to Auditorium Bldg., Los Angeles.

Clark, Royal F., from Byrne Bldg., to San Fernando Bldg., Los Angeles.

Colburn, John R., from 515 Huntington Bldg., to Delta Bldg., Los Angeles.

Cowles, J. E., from Wilcox Bldg., to Los Angeles Trust Bldg., Los Angeles.

Colliver, John Adams, from Bradbury Blk., to Laughlin Bldg., Los Angeles.

Chamberlain, H. H., from County Hospital, to Coulter Bldg., Los Angeles.

Edwards, Wm. A., from H. W. Hellman Bldg., to Security Bldg., Los Angeles.

Garcelon, Harris, from 229 No. Grand ave., to Douglass Bldg., Los Angeles.

Gerson, T. Percival, from W. H. Hellman Bldg., to 639 Westlake ave., Los Angeles.

Godin, A. F., from Potomac Bldg., to Auditorium Bldg., Los Angeles.

Gwaltney, Sylvester, from Mason Bldg., to Grosse Bldg., Los Angeles.

Hale, Geo. V., from Burbank, Cal., to Artesia, Cal. (temporarily).

Hagadorn, Jesse L., from Copp Bldg., to Bumiller Bldg., Los Angeles.

Huff, Lucius J., from Union Trust Bldg., to Auditorium Bldg., Los Angeles.

Kirkpatrick, J. L., from 114 So. Spring st., to Bumiller Bldg., Los Angeles.

Lund, Geo. J., from Trust Bldg., to Auditorium Bldg., Los Angeles.

MacGowan, Granville, from Merchants Bldg., Los Angeles, to Lissner Bldg., Los Angeles.

Martindale, Jno. H., from Johnson Bldg., to Auditorium Bldg., Los Angeles.

Mattison, Fitch C. E., from Stowell Bldg., to Chamber of Commerce, Pasadena.

Mattison, S. J., from Stowell Bldg., to St. Louis Bldg., Pasadena.

Noble, Mary L., from 319 Grant Bldg., to Auditorium Bldg., Los Angeles.

Nixon, Anne W., from 516 E. 7th st., Stirling, Ill., to 936 Gratton st., Los Angeles.

Petter, Reginald S., from 1201 Central ave., to 853 Central ave., Los Angeles.

Oldham, Jno. Y., from Grant Bldg., to Ocean Park, Los Angeles.

Quint, Sumner, J., from Potomac Bldg., to Coulter Bldg., Los Angeles.

Rosenberger, J. A., from Sanger, Cal., to Byrne Bldg., Los Angeles.

Rogers, A. C., from Bryson Bldg., to Security Bldg., Los Angeles.

Shurtleff, Fred C., from Johnson Bldg., to Auditorium Bldg., Los Angeles.

Smith, Bertnard, from I. W. Hellman Bldg., to Security Bldg., Los Angeles.

Smalley, Clifford A., from 1024 W. 23d st., to 1000 W. 23d st., Los Angeles.

Speicher, A. F., from 3005 Vermont ave., to Coulter Bldg., Los Angeles.

Stevens, Geo. M., from 1426 West 24th st., to 2405 So. Hoover st., Los Angeles.

Sherk, Henry H., from Slavin Bldg., Pasadena, to 268 So. Orange ave., Pasadena.

Turner, Wm. D., from 332 N. Raymond, Pasadena, to Stanton Bldg., Pasadena.

Walwrath, G. B., from Copp Bldg., Los Angeles, to Security Bldg., Los Angeles.

Wilson, Andrew P., from 1824 Central ave., Los Angeles, to Lissner Bldg., Los Angeles.

Wier, Francis A., from 201 N. Madison ave., Pasadena, to 550 E. Walnut, Pasadena.

Wilson, J. M., from 1242 E. Colorado st., Pasadena, to 56 N. Euclid ave., Pasadena.

Beckingsdale, D. L., from Fort Mason, San Francisco, to S. S. "City of Panama," care of Pacific Mail Steamship Company, San Francisco.

Burrows, Fred G., from 1800 Sutter st., to Union Square Building, 350 Post st., San Francisco.

Deane, Louis C., from 2502 Washington st., to Union Square Bldg., 350 Post st., San Francisco.

Franklin, W. Scott, from S. W. cor. Sutter and Polk sts., to Butler Bldg., Geary and Stockton sts., San Francisco.

Johnson, Albert W., from 710 14th st., to 2095 Market st., San Francisco.

Kirk, Albert W., from 2127 Fillmore st., to Monadnock Bldg., 681 Market st., San Francisco.

Knorp, Francis Frederick, from 3009 Sacramento st., to Butler Bldg., Stockton and Geary sts., San Francisco.

Levison, Chas. G., from 2420 Pacific ave., to Union Square Bldg., 350 Post st., San Francisco.

McReynolds, R. P., from 219 N. Grand ave., Los Angeles, to Coulter Bldg., Los Angeles.

Madden, Thos. F., from Sanger, Fresno Co., to Millwood, Fresno Co.

Clark, D. A., from Santa Barbara County, to Middletown, Lake Co., P. O. Box 5.

Rookledge, P. L., from Cambria, to San Luis Obispo, Cal.

Lindsay, Wm. K., from 1029 2d st., Sacramento, to 706½ K st., Sacramento.

Deaths.

Los Angeles Co.—**Tanner, J. B.; Day, B. W.;** Long Beach, **Porter, Chas. S.**

San Francisco.—Conrad, Thos.

Dropped.

Los Angeles Co.—Chase, R. E.; Dickinson, D. K.; Freeman, E. M.; Hall, J. S.; Mathias, E. N.; Reynolds, F. W.; Rendon, V. A.; Sexton, C. L.

Resigned.

Los Angeles Co.—Keyes, Henry S.; **Sleeper, K. R.** (transferred from Los Angeles Co. to Riverside Co.); Stokes, W. H.; **Brown, Newbern N.** (transferred from Los Angeles Co. to Kern Co.); Rankin, Caroline W.

New Members.

Anton, Francis L., Pacific Mutual Bldg., Los Angeles.

Bancroft, Irving R., Byrne Bldg., Los Angeles.

Sherer, Wm. W., Lissner Bldg., Los Angeles.

Scott, Alf. J., 119 So. Fremont ave., Los Angeles.

Sundin, P. O., 1516 Girard st., Los Angeles.

McCarthy, Isaac A., Union Trust Bldg., Los Angeles.

French, J. Rollin, 526 S. St. Louis st., Los Angeles.

Van Meter, S. Y., 101 East Ave. 57, Los Angeles.

Lissner, Henry H., Lissner Bldg., Los Angeles (transferred from San Francisco County).

Delinquent.

Anderson, Helen O.—Gone to Europe.

Ross, R. O.—Removed; address unknown.

BOARD OF EXAMINERS, APRIL SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percentage.
Cal. Med. (Ecl.) Coll., S. F., Cal.	5, 20, 02	75.7
Coll. of P. & S., Los Angeles, Cal.	6, 18, 07	78.3*
Coll. of P. & S., S. F., Cal.	6, 6, 07	78.6
Coll. of P. & S., S. F., Cal.	6, 25, 02	75.2
Cooper Med. Coll., S. F., Cal.	5, 8, 07	79.
Cooper Med. Coll., S. F., Cal	5, 8, 07	(Condition in Aug. Ex. removed)
Univ. of Cal., S. F., Cal.	5, 14, 07	81.4
Univ. of Cal., S. F., Cal.	5, 14, 07	79.2
Univ. of So. Cal., L. A., Cal.	6, 14, 06	82.5
Univ. of So. Cal., L. A., Cal.	6, 13, 07	80.
Univ. of So. Cal., L. A., Cal.	–, –, 07	76. *
Bowdoin Med. Coll., Me.	6, –, 95	83.3 plus 5=88.3
Coll. of P. & S., Ill.	6, 4, 07	81.1*
Coll. of P. & S., Ill.	6, 15, 06	78.4*
Coll. of P. & S., Ill.	6, 4, 07	75. *
Coll. of P. & S., Columbia Univ., N. Y.	6, 13, 00	80.4
Detroit Coll. of Med., Mich.	3, –, 78	77.1 plus 15=92.1
Eclec. Med. Inst., Ohio	6, 2, 91	78.1 plus 5=83.1
Georgetown Univ., Wash., D. C.	–, –, 00	75.7*
Gross Med. Coll., Colo.	4, 14, 91	76. plus 5=81.
Harvard Univ. Med. Coll., Mass.	6, 27, 06	86.9
Kansas Med. Coll., Kans.	3, 23, 92	75. plus 5=80.
Long Island Hosp. Coll., N. Y.	6, 1, 05	80.8
McGill Univ., Montreal, Can.	6, 13, 02	84.7
Med. Chirur., Phil., Pa.	5, 28, 04	77.6
N. W. Univ., Ill.	6, 16, 04	81.8
N. Y. Homeo. Med. Coll., N. Y.	6, –, 02	80.8*
Omaha Med. Coll., Nebr.	3, 21, 92	82.3 plus 5=87.3
Rush Med. Coll., Ill.	6, 17, 03	75.
Univ. of Iowa	3, 17, 97	(Condition in Dec. Ex. removed)
Univ. of Mich.	6, 18, 03	82.5
Univ. of Mo.	4, 27, 97	74. plus 5=79.
Univ. of Penn., Pa.	6, 13, 95	82. *
Univ. of Penn., Pa.	5, 1, 90	79. plus 5=84.
Univ. of Toronto, Can.	–, –, 07	77.7
Yale Med. School, Conn.	6, –, 04	80.5

* On review of previous examinations these applicants have attained the necessary average.

Failed.

Coll. of P. & S., S. F.	5, 17, 06	74.
Coll. of P. & S., S. F.	6, 6, 07	73.7
Coll. of P. & S., S. F.	5, 17, 06	71.8
Coll. of P. & S., S. F.	5, 17, 06	68.2
Coll. of P. & S., S. F.	6, 6, 07	66.4
Coll. of P. & S., S. F.	7, 26, 02	61.6
Coll. of P. & S., S. F.	6, 6, 07	53.4
Cooper Med. Coll., S. F., Cal.	4, 28, 03	70.7
Cooper Med. Coll., S. F., Cal.	5, 8, 07	70.
Cooper Med. Coll., S. F., Cal.	5, 18, 07	69.9
Univ. of So. Cal., L. A., Cal.	6, 13, 07	73.6
Univ. of So. Cal., L. A., Cal.	9, 3, 04	71.2
Univ. of So. Cal., L. A., Cal.	6, 12, 02	66.6
Barnes Med. Coll., Mo.	5, 3, 04	68.9
Howard Univ., Wash., D. C.	5, 17, 91	25.4 plus 5=30.4
Louisville Med. Coll., Ky.	3, 25, 97	66.6 plus 5=71.6
Med. Coll. of Ohio	3, 1, 71	2.3 plus 15=17.3
Miami Med. Coll., Ohio	5, 6, 03	70.6
Nagasaki Med. Coll., Japan	11, 13, 02	20.8
Northern Inst. of Osteop., Minn.	6, 1, 97	55.5 plus 5=60.5.
Univ. of Iowa	6, 12, 07	72.6
Univ. of Mich.	3, 6, 79	72.6 plus 10=82.6
Univ. of Mich.	6, 25, 91	71.3 plus 5=76.3
Univ. of Mich.	6, –, 92	69.3 plus 5=74.3

NEW LICENTIATES.

Adams, Chas. B.; Baker, Clark D.; Bucknam, Ralph W.; Conner, Ada S.; Conner, A. W.; French, J. R.; Graham, L. B.; Ham, J. G.; Hinman, C. J.; Hoffman, R. O.; Howell, Walter O.; Hunt, Helena A.; Hurst, J. H.; Johnson, P. V. K.; Johnston, Jas. H.; Jones, Carl P.; Keene, Walter P.; Knapp, Edw. V.; Lewis, W. J.; Loizleaux, Edw. S.; Melvin, J. T.; Myers, M. C.; Newman, H. P.; Owen, J. L.; Palmer, Chas. T.; Robinson, F. N.; Roeder, Geo.; Sawyer, W. A.; Sinclair, Rosa M.; Trout, F. M.; Walker, H.; Ward, Edgar K.; Warmer, Chas. A.; Webster, I. D.; Whedon, D. D.; Wortmann, H.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -
Butler Building, San Francisco.

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI JULY., 1908. No. 7

EDITORIAL NOTES.

THE A. M. A. MEETING.

Probably the most remarkable gathering of medical men in the history of this country occurred in Chicago in the first week of June; it was the Fifty-ninth Annual Meeting of the American Medical Association. By nine o'clock on Monday morning, June 1st, the registration hall was crowded and it was evident to one with half an eye that all previous records of attendance would be broken. And this assumption was well within the fact, for no less than 6447 members registered during the session, and doubtless there were several hundred who came but did not register; there are always some in this class. The House of Delegates began its work promptly on Monday morning and conducted a maximum amount of business in a minimum amount of time; there were no hitches and no squabbles, and when any matter came to a final vote, in almost every instance the vote was unanimous. A resume of the work of the house will be found on another page and it will be seen that measures of great importance were passed upon. The two great undertakings of the Association—the Council on Pharmacy and Chemistry and the Council on Medical Education—were heartily and enthusiastically supported and ample funds provided for their continued activity. By unanimous vote, Dr. J. N. McCormack was requested to continue in charge of the work of organization and public education in matters medical, and he unwillingly consented to do so. No man in our profession has done more arduous work during the past six years, or at greater personal sacrifice, for the benefit of physicians, than has Dr. McCormack. Only eight delegates from the various state associations failed to register in the House of Delegats; and, we are ashamed to confess the fact, California was one of the eight states so lacking. But two of our three delegates were in attendance. This is not as it should be and the House of Delegates of our State Society, at its next meeting, should see to it that members are elected who can and will fulfil the obligations which they assume when they consent to become delegates. The work of the Association is far too important to every physician in the land to be in the slightest degree neglected. Let us think this matter over carefully and choose deliberately, at our next meeting, such delegates as we may be sure will be in attendance and will represent our state. It is true that to be a delegate means to work; but the work is not as hard as it was a few years ago, and the house manages to perform its labors in much less time than formerly, thus giving delegates some time to devote to their section work.

THE NEW OFFICERS.

Dr. Burrell, the President, made an ideal presiding officer and conserved the time of the house very materially. His rulings were uniformly just and made promptly; and, withal, with due courtesy. Atlantic City was chosen as the place for the next meeting, the time to be set by the Trustees, depending upon the dates which are available, though probably about the third week in June, 1909. Dr. William C. Gorgas, Colonel, U. S. A., was elected President-elect and will be installed at the next meeting. Certainly the Association honored itself no less than Colonel Gorgas in electing for its president one who has written his name so high upon the roster of American physicians. First Vice-President, Dr. Thomas Jefferson Murray, Butte, Montana; Second Vice-President, Dr. John A. Hatchett, El Reno, Oklahoma; Third Vice-President, Dr. Thomas A. Woodruff, Chicago; Fourth Vice-President, Dr. E. N. Hall, Woodbury, Kentucky; Secretary, Dr. George H. Simmons; Treasurer, Dr. Frank Billings; Trustees (term expires 1911), Dr. Wisner R. Townsend, New York; Dr. Philip Mills Jones, San Francisco, and Dr. William T. Sarles, Sparta, Wisconsin. The Trustees whose terms have not expired are as follows: Expire 1909—Drs. William H. Welch, Miles F. Porter, M. L. Harris. Expire 1910—Drs. T. J. Happell, W. W. Grant and Philip Marvel.

COUNTY OFFICERS.

Some time this fall (the exact date has not been set, but it will probably be in September) there is to be held a meeting of the Presidents and Secretaries of County Medical Societies with the officers of the State Society. The date and place will be announced later. This meeting is for the purpose of bringing together those who are closely in touch with organization work all over the state, to the end that we may come to a better understanding of conditions in the various counties, and study how to increase and improve the body upon which all medical organization is founded—the County Medical Society. With the numerous undertakings that are pressing upon us as medical men—state sanitation, preventive medicine, the education of the public, the nostrum fight, proper conception of sanitary legislation, etc.—it becomes imperative that we more closely weld the units of our profession into a solid instrument for the good of the people in our charge. We therefore ask every officer of every County Medical Society to take this matter to heart *now*, remember that the meeting is to be held, and endeavor so to arrange his affairs that he will not be prevented from attending. It will be one of the most important medical meetings ever held in this state, and it should be fully attended. Do not let any trivial thing keep you away, but come even if at the expense of some time and money. Those County Medical Societies that can afford it should pay the expenses of their officers. Remember that our organization stands for betterment; for educating the public in the matter of proper support of our profession, to the end that the people may be the better served and by medical men who are able to keep abreast of medical progress—which they can not do if insufficiently supported. Everything that makes for better physicians, better supported physicians, is by that much a direct benefit to the public. Keep this meeting in mind and do not fail to attend it.

A VALUABLE DEPARTMENT.

One of the very valuable departments of the *Journal A. M. A.* is that of Therapeutics. Often we feel keen regret that lack of space prevents us from reprinting the articles in this department in their entirety—anything else would be unsatisfactory. The conditions governing therapeutic requirements are so clearly and concisely—so sanely—put, that they must be of value to every reader. And not the least valuable feature of this most excellent work is the fact that no prescription is given that can not be easily compounded by any competent pharmacist. It is refreshing to see something of the old-time common sense use of drugs, rather than this twentieth century haste to make use of the last thing mentioned by the last drummer who came into the office with his routine, learned-by-heart-from-the-manufacturer song about the wonderful and utterly impossible things which his stuff will do. Painstaking, faithful and accurate work is back of these articles, and the author is indeed to be congratulated upon them. May we hope that the *Journal A. M. A.* will, in due course of time, reproduce these contributions in book form so that they may be placed in the hands of physicians at a moderate cost?

STATE JOURNALS

Once more has the House of Delegates of the American Medical Association gone on record as unanimously endorsing the Council on Pharmacy and Chemistry and as asking the official journals of state medical organizations to refuse advertising space to preparations not approved by the Council. This is a perfectly natural and reasonable request. The Association as a whole may well request its component parts to do individually no less than their own representatives do collectively when assembled and acting for them. Why should these representatives be made to suffer the humility of seeing their respective state organizations act in a manner contrary to the policy which they have all (and unanimously) endorsed collectively? Why, for instance, should the large and influential delegation from the great Empire state be compelled to suffer the indignity of seeing the journal of their State Society publish, simply because of the few dirty dollars, the advertisements of preparations whose fraudulent character has been exposed by the Council on Pharmacy and Chemistry in the pages of the *Journal A. M. A.*? It seems, to put it very mildly, most inconsistent. If a thing is right it is right, and just as right today as it will be one year from now—or ten. The Council has unmasked the lies of certain manufacturers and the House of Delegates has said that it is not right to continue to promote the use of such things or to advertise them to self-respecting medical men. Then why should supposedly self-respecting medical men, collectively representing a state medical organization, continue to secure tribute from such unmasked frauds? It certainly seems queer. And the Associated Physicians of Long Island are in this same queer fix; apparently they would rather have some few dollars derived from fraud than retain their self-respect. We do not mention New York and Long Island because they are the only offenders; there are others. These are referred to because they are the biggest offenders and there seems the least reason for their doing these things. Surely the New York State Medical Society is large enough and rich enough to worry along without the comparatively small sum which it derives from fraud through the pages of its official journal. And are the Associated Physicians of Long Island so nearly approaching objects of charity that they must also needs participate in this form of despicable graft? It is indeed a sad spectacle. Perhaps they will in time appreciate their peculiarly anomalous position, and reform. Let us continue to hope.

THE NEW REGISTER.

For some weeks the work of compiling the new edition of the Register and Directory has occupied the attention of our office. It is hoped that the volume may be ready for distribution about the latter part of July or the middle of August, though the actual date is as yet uncertain. During the past year a spirit of maddening unrest seems to have pervaded the whole medical profession of the state, and the number of changes of address is something wonderful and fearful. Changes are coming, literally, by the hundred, and our meager clerical force has been swamped for days at a time, checking them up. It must necessarily be, therefore, that many changes will come in at the last minute or when the book is on the press and so too late to be made. It is always so. Please, *please,* good sir, be patient if you see yourself in the new edition with an old address; and remember that there is just a possibility that you did not think to send us your change of address. We do the best we can at mind reading, projection of the astral body, manipulation of the kama (?), and other esoteric things—not to speak of making use of county society secretaries, telephone books, etc., etc., but even so we sometimes fail to note a change of address that has not been sent to us. Furthermore, human nature is still frail and fallible, and mistakes will occasionally occur in spite of the fact that the work is checked no less than three times before being uttered. Kind friend, bear these things in mind and be humanly charitable.

ARTICLE ON PLAGUE.

In this issue we begin the publication of a most valuable contribution to the literature of Plague. Dr. W. C. Rucker, U. S. P. H. & M. H. S., has kindly translated for the JOURNAL, at no little personal sacrifice of time and trouble, an article by Le Dantec, which translation makes far and away the most comprehensive contribution to the subject that has yet appeared in English. There are no less than three distinct foci of plague on the Pacific Coast: San Francisco, the Bay Counties and Seattle. How long they will remain plague foci, no one can even guess; but that they will so remain for a period of time longer than it is pleasant to contemplate, no one at all conversant with the disease and its history will for a moment doubt. Of course there will be a few with minds (?) ossified or atrophied by years of disuse, or congenitally lacking intellect, or with an early acquired longing for the limelight of lay publicity, who will break forth into fulminations (mostly in lay publications) on the subject and write themselves asses by denying that plague exists or ever did exist in this portion of the globe. But this infinitesimally small element will not, in the long run, have any effect upon the final result. It seems highly desirable that every physician on this coast should have in his possession a complete history of the disease, together with a clear picture of its forms, clinical manifestations and pathology. All this the article by Le Dantec gives, and with the exception of the very latest work of the Indian Plague Commission, it is complete. We, therefore, commend it to your careful attention.

A SIMPLE ILLUSTRATION.

A certain number of physicians seem still to be in doubt as to the actual value of the work of the Council on Pharmacy and Chemistry. Fortunately, this number is not large and is growing smaller; however, there will always be some who, for reasons best known to every one else and denied by themselves, will revile the Council and anathematize its work. The Council's work may be said to be along two distinct lines: (1) determining the truth as to formula of composition and (2) correcting statements of manufacturers as to the value or the effects of individual preparations. A notable example of the valuable work of the Council along the latter line of activity was furnished, recently, in the *Journal A. M. A.,* in an article dealing with the diastasic ferments. One preparation put out by a prominent manufacturer bore upon its label the statement that it would convert one hundred and fifty times its weight of starch; as a matter of cold fact, it could convert fifteen times its weight of starch. A more recent example of the value of the work of the Council is found in the *Journal A. M. A.* for June 13th. Two preparations put out by a German firm of manufacturing chemists and for a long time claimed to be definite, synthetic chemical substances, have been found to be merely mechanical mixtures; we refer to arhovin and pyrenol. Certain of the nostrum-subsidized medical (?) press, whose editors look with alleged holy horror upon the work of the Council, have made the false claim that the Council basely discriminated against American manufacturers and in favor of the German brand. The present expose is, in consequence, very timely, though its application will of course be ignored or denied by the before-referred-to editors of medical (?) journals whose first duty is to the nostrum maker (this term, if translated into plain English, would read "money payer"). The last paragraph of the article referred to is really too choice to omit:

> "The firm that makes pyrenol, the *Ghemisches Institut,* Dr. A. Horowitz, Berlin, also makes iodofan, the composition of which was recently shown to differ vastly from the advertised claims. It also puts out visvit, a nostrum which has been exploited by means of clinical histories rehashed from write-ups of other preparations. All of which goes to show that pharmaceutical literary fiction is not confined to the United States, but that German enterprise in this, as in other lines, is encroaching on a highly specialized field. Simple patriotism, however, would seem to dictate that if we must be humbugged let it at least be by home talent."

NEW STATE JOURNALS.

Tennessee has joined the family of state organizations which publish a journal, and under date of June appears the first number of *The Journal of the Tennessee State Medical Association*. It is in every way a clean, dignified, well published periodical, and is under the able editorial management of Dr. George H. Price, Nashville. We are advised that from this, its beginning, it is to follow the only safe policy and accept for advertising only such preparations as have been approved by the Council on Pharmacy and Chemistry. We most assuredly extend to this youngest of the family every good wish for long life, sturdy good health and a valuable career. A couple of years or so ago, the state organization of Maryland had the journal matter under consideration but, unfortunately, instead of starting their own journal, they made the *Maryland Medical Journal* the official publication of the Medical and Chirurgical Faculty of Maryland (which is the name of the state medical organization). The word "unfortunately" is used advisedly, for this publication has always been close up in the front rank of the "published-for-profit" class of medical (?) journals. We imagine it must be a good deal of a shock to some of the physicians of Maryland, for instance, some of the members of Johns Hopkins, to see, in the pages of the official journal of their "Faculty," advertisements of such things as glycozone, cypridol, Gray's tonic, ergoapiol, Hagge's codliver oil (nit), tongaline, papine, eusoma, bovinine, seng, cactina, antiphlogistine, passiflora, chionia, Peacock's bromides, Fellow's syrup, glycothymoline, peptomangan, viburnum compound, fig syrup, resinol, salhepatica, etc. About the only nostrum we miss is antikamnia. And still, with this truly wonderful list of notorious nostrums to its credit, the editor has the nerve to say:

> "As to the character of the Journal's advertising matter, we are pleased to affirm that it is of a high order, as conceded by its contemporaries and competent judges in general. * * * That the advertising pages of the Journal are clean, consistent and commendable will best be seen by invidious comparisons with others of its class."

Now, it takes real nerve to make a statement like that, and whatever the editor may be, he is certainly entitled to consideration for his monumental nerve! The qualifying word is there, however. It probably is no worse than others "of its class"; but, good Lord, what a class! No wonder the Maryland "Faculty" has decided to publish a medical journal of its own and thus divorce decent medicine from predatory nostrum fraud. The only wonder is that the respectable element in the medical profession of Maryland has been able to tolerate the unholy alliance for so long.

ACUTE OTITIS MEDIA IN INFANCY AND CHILDHOOD.*

By H. BERT. ELLIS, M. D., Los Angeles.

Diseases of children have been and still are neglected to a great extent; more neglected than any other branch of the practice of medicine. This is largely due to the fact that diagnosis is particularly difficult, the infant being unable, through lack of language, to give any idea of the physical symptoms; and the young child too imaginative to correctly express the condition.

In infants, it is not easy to diagnose otitis media; not only are the parts very small, but the external meatus is apt to be filled with epidermis scales. In dead nurslings, purulent inflammation of the ear is found at autopsies in four-fifths of the cases; this form of trouble is usually latent, and in other cases suggested by restlessness and tossing of the head. This concomitant otitis differs quite sharply from the ordinary form, which has much more pronounced symptoms, the most prominent of which is pain, but in the most destructive lesions of scarlet fever, pain is sometimes conspicuously absent, or at least not complained of by the apathetic child; this latter fact is of great importance and must not be lost sight of by the general practitioner. On the other hand, severe symptoms simulating brain lesions, stupor or convulsions, may arise in simple otitis and these be immediately relieved by paracentesis; hence there is a need of examination of the ears in all such cases, for the little patients thus affected cannot tell of their earaches.

At birth the interior and exterior walls of the external meatus and the membrana tympani are in simple coaptation and the irregularities filled with desquamated epithelium, the canal opens in a few days, forming an hour-glass canal (smaller at the inner end), the axis of the meatus being directed upward, causes the downward pulling of the auricle to inspect the membrane, which together with the cavity is about as extensive in the child as in the adult. A sieve-like bone separates the floor of the tympanum from the carotid canal and the jugular fossa. "The oblique position of the meatus and the thin plate of bone allow a puncture of the jugular bulb during paracentesis."

"The greater resistance of the drum membrane in the young (the external cutis layer being often thicker than in the adult), the median connective tissue membrane very solid and the inner mucous membrane and its pavement epithelium at least as normal as in advanced age, contribute to the comparative infrequency of perforations." (Jacobi Otitis Media in Children. *Archives of Otology*, April, 1905.)

The relative infrequency of spontaneous perforation and the anatomical difficulty of drainage, make the purulent secretion in the tympanum seek other methods of escape. At birth, the temporal bone is loosely connected with the cranial bones, is vascu-

*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

lar and traversed by many foramina containing blood vessels. The outer walls are more spongy than the tegman, and hence the readiness of post aural abscesses in infancy.

Owing to the influence of gravitation and the fact that the young periosteum and the numerous foramina are readily dissected the direction of least resistance is usually outward,

(a) upward and outward through the Rivinian fissure, in the antral roof and backward between the bone and periosteum to form abscesses behind and above the ear;

(b) through cartilaginous fissures, involving posterior auricular glands, displacing the auricle outward and forward in the characteristic way;

(c) through the imperfectly closed roofs or the communicating blood vessels and lymph channels, directly to the middle fossa, setting up a meningitis or subdural or brain abscess;

(d) from the same sources, jugular thrombosis. In the very young, because the sinus is a flat affair, it is not involved, but in older children, through carious softening or through the medium of intercommunicating structures there may be thrombosis of the lateral sinus.

(e) The process may be extended by way of the posterior surface to the cerebellum.

These pathological processes being so numerous, serious and likely to occur, there is a sharp demand for early, prompt, and if possible, prophylactic treatment. Immediate adenectomy on involvement, careful and extensive incision of the drum, are the early procedures.

Another important fact is that the lymphatics are nine times more permeable in infancy than in the adult.

The differences between the adult and infant eustachian tubes are briefly as follows:

1. The tube is much shorter at birth, less than one-half as long (15 mm. to 38 mm.).

2. The orifice and calibre are nearly as great as in the adult, hence proportionately much wider.

3. The child's tube is straight, having no angle at the isthmus.

4. The tube is nearly horizontal; in the adult, the pharyngeal end is 12 to 14 mm. lower.

5. The mouth of the tube in the pharynx is, in a child at term, on a level or slightly below the plane of the hard palate. All these conditions favor the entrance of germs into the middle ear through the tube from the inspired air and nasal secretions.

The presence of vascular lymphoid tissue at the door of this open pathway (often itself infected) renders otitic infection quite a common thing.

Kerrison (*Laryngoscopic*, Sept., '07) states that acute tympanic inflammation calls for adenectomy, for the following reasons:

1. The operation for adenectomy involves some risk to healthy ears. It seems wiser, therefore, to operate during the acute stage, when the ears can be safeguarded by a free incision of the drum membrane.

2. The abstraction of blood relieves tubal congestion and favors resolution.

3. With a growth sufficiently large to produce congestion of the pharynx, recovery from acute tymphanic disease is apt to be slow.

4. Some cases will not recover until adenoid tissue is removed.

On account of the low level of the pharyngeal orifice, Preysing denies the easy exit of pus from the ear to the pharynx. He claims that the pus, which is mostly thick, "would rather, while the infant is on its back, run into the mastoid antrum than through the tube."

Nearly all earaches in children under ten years of age, and the periodical earaches which occur in the night time, lasting for a few hours and recurring for a few hours for several days, are due to adenoid congestion. Indeed, this condition is the cause of febrile attacks more frequently than any other disease of infancy save the exanthemata.

"Otitis media is of frequent occurrence in the very young. It may combine with the retrograde involution of the embryonal myxomatous tissue, which may disappear soon after birth, but often persists in the antrum and tympanic cavity and undergoes purulent softening." (Jacobi, Otitis Media in Children. *Archives of Otology*, April, 1905.)

Microbes get into the middle ear in the contiguity of the surface of the mucous membrane quite frequently, or are thrown in during coughing, vomiting, or sneezing (or especially blowing the nose); nurslings are in danger during suckling and deglutition. Medicinal and other injections into the nose are sometimes the cause of infection, more especially the snuffing up of solutions or powders.

In severe otitis media, scarlet fever leads (10%). Cerebro-spinal meningitis, the infection coming from within, produces hopeless deafness and staggering. Measles, diphtheria, influenza, pneumonia, enteritis, smallpox are all diseases which may produce an otitis media.

Pain, dull to sharp, continuous or intermittent, sometimes with moaning, more often with a sharp cry, restlessness, pulling of the hair, burrowing of the head in the pillow, fever, sometimes stupor or convulsions are seen in the very young. Older children complain, the same as adults, of a feeling of fullness, tinnitus and deafness. There may be also tenderness of the ear on manipulation.

The principal thing, however, is the recognition of adenoids and their removal prior to infection, *and no age is too young*. In not a few instances I have operated upon infants a month old. All babes that have difficulty in nursing and breathing should be examined by the specialist, and if adenoids are enlarged, they should be immediately removed. Tonsils, at this age, should not be operated upon.

The symptomatology of adenoids in infancy differs considerably from that of childhood, but it is still fairly characteristic. However, the evil results

in infancy are even worse than they are in childhood.

There seems to be a prejudice in the profession, and among the specialists, to a certain extent, against the removal of adenoids in infancy, because of their likelihood of recurrence, but this should be of little weight, for if it be true, the infant is the gainer during the period of their absence. Their removal in infancy is accompanied by slight danger, and their removal in childhood is no more serious, so that we cannot be justified in allowing infants afflicted with enlarged adenoids to have their development seriously or irreparably interfered with, when a simple operation, practically unattended by danger, will certainly to a great extent relieve them of these conditions.

The nose of the infant is relatively small and the respiratory space very small. The nasopharynx is low, but deep from in front backwards, being almost as deep as in the adult. The height increases rather rapidly for six months, and then slowly up to two years. The nasopharynx is extremely vascular in infancy and the lymphoid ring is well developed.

Because of the low condition of the superior pharynx and post nasal opening, a relatively small enlargement of the normal adenoid tissue may cause a marked obstruction to nasal respiration. In infancy, this is a very serious matter, especially when it is anywhere near complete. Interference with nasal respiration necessitates oral respiration, which the young infant performs very imperfectly when asleep. This interference results in constant deprivation of a sufficient supply of oxygen, which in turn, produces a disturbance of nutrition, which is uninfluenced by any other method of feeding or mode of life.

Another serious result of nasal obstruction is the interference with suckling and sometimes with swallowing. The effort of suckling is so great that these babies take only enough food to satisfy the acute pangs of hunger, which again interferes with their nutrition and development. The difficulty of breathing makes them restless at night and interrupts their sleep, another disturbance to nutrition.

Snuffles in infancy is almost as diagnostic of enlarged adenoids as it is in childhood, and adenoids are almost always found in babies who suffer from frequent or continuous colds in the head. Irritating coughs, especially those occurring at night, without physical sign, are usually the result of adenoids.

Adenoids frequently accompany and probably cause catarrhal laryngitis and spasmodic croup. I say probably, because their removal so frequently relieves these symptoms.

An infant who is restless and sleepless at night should, if definite cause for same be not evident, be examined for hypertrophied adenoids.

Adenoids frequently cause enlargement of the cervical lymph glands, and they are without doubt the greatest factor in the production of acute otitis media, consequently should be removed as a prophylactic measure.

THE INDICATIONS FOR THE MASTOID OPERATION.*

By HILL HASTINGS, M. D., Los Angeles.

The subject of middle ear and mastoid suppuration has been discussed time and again in the meetings of ear, nose and throat societies. It is a subject of such vital importance that the chairman of this section and the program committee are to be commended for bringing it up for consideration at this general meeting of our State Society. The part of the subject assigned to me—The Indications for the Mastoid Operation—is, I take it, to present for discussion the chief signs and symptoms that have been accepted by otologists in the last few years as indications for immediate operation.

In the beginning it must be admitted that some mastoid operations are done where recoveries would likely have resulted without operation. On the other hand it must, with equal fairness, be admitted that in some cases death resulted through unwarrantable delay in operating. It should be stated also that seldom are the mastoid symptoms so severe that the patient would seek operation until serious, if not fatal, complications had arisen. It is not within the province of this paper to discuss these complications.

In every case of middle ear suppuration, the mastoid antrum, being a part of the middle ear, is believed to be involved and there may be more or less inflammatory congestion of the adjacent mastoid cells. It is therefore fallacious to say "when the mastoid antrum is involved the mastoid should be opened." This advice, I believe, is generally discredited both by the specialist and the general practitioner. No such arbitrary law can be laid down. In each case a careful study of many factors must be made to insure a timely operation. These factors may be determined by the following steps: (A) A careful otoscopic examination. (B) Examination of the mastoid region. (C) The history of the case and the general signs and symptoms.

(A) The Otoscopic Examination. What can we learn from this? First, the amount and character of the discharge, including a microscopic examination to determine the infective organism. Second, the appearance of the fundus; that is, the drum membrane and the adjacent canal wall. Third, the degree of deafness.

A careful otoscopic examination is most important, for on that alone without mastoid pain or tenderness and without general symptoms, such as fever, a mastoid operation is in a few cases indicated. Permit me to cite one illustrative case:

Mr. C., aged fifty-two, consulted on November 23, 1907, on account of profuse discharge from the right ear of four weeks' duration. The onset was sudden, four weeks before; severe pain in the ear followed a sore throat. The drum membrane perforated spontaneously and profuse discharge with relief from pain had continued; never any mastoid pain or soreness; no fever, nausea or vomiting; general health

*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

was good. Examination showed the canal full of pus. A stained smear of the pus showed streptococci. The drum membrane was found to be beefy red, thick and sagging above and behind. The deafness was extreme (watch not heard on contact, whisper and speech doubtful). No mastoid tenderness could be elicited, although the patient was warned of the importance of confessing any difference in sensation from pressure on the mastoid of each side. Operation showed that the interior of the mastoid was full of pus; the lower half of the process had broken down, forming one large abscess cavity that extended down to the knee of the lateral sinus. Smears from the mastoid pus, also, showed streptococci.

This case is not uncommon and illustrates the main diagnostic points to be looked for in an otoscopic examination; namely, profuse purulent discharge, the presence of streptococci, a badly inflamed drum membrane with sagging of the postero-superior canal wall and considerable deafness; all of which indicate a severe degree of middle ear involvement.

As to the quantity of the discharge. When pus in *large quantity* continues to pour from the middle ear after three weeks of ineffective local treatment, the mastoid operation is indicated whether or not there are other signs and symptoms. On opening many mastoids, one can not fail to be impressed with the fact that the destruction within the mastoid is, in many cases, surprisingly great, often having resulted in purulent collections on the brain or lateral sinus without any local or general signs or symptoms having been observed.

The *microscopic examination* of the ear discharge should be a routine proceedure in every case. Smears should be made of fresh pus as it escapes from the perforation in the drum membrane. Of late it has been my practice to carry, ready for use, sterile swabs in glass tubes from which cultures are made. This aids in the differentiation of the organisms. Smears alone are often unreliable. For instance, many reports of pneumococci are said to be inaccurate, culture showing the organisms to be capsulated streptococci. Furthermore, there are several and maybe many varieties of streptococci, varying in virulence. It is an interesting and important part of the subject under discussion, but would be wearisome to treat of in detail. All observers seem to agree, however, that the presence of streptococci in the ear discharge indicates a dangerous infection; pneumococci, less dangerous; other diplococci and staphylococci least dangerous.

The *examination of the fundus,* comprising by that term the drum membrane and the adjacent canal wall, is of great importance. A beefy-red, bulging drum membrane with sagging of the postero-superior canal wall indicates a high degree of middle ear inflammation. This must be differentiated from the bulging, often attended by sagging, that is found in children with exudative catarrhal inflammation. In such cases the mucus character of the discharge, the pale redness of the drum membrane, the slighter degree of deafness, the absence of mastoid tenderness, and the presence of less virulent bacteria serve to clear up the diagnosis.

As to the deafness. In every case the hearing should be tested, at least by the watch, whisper and conversational voice. This is practicable, except in very young children, and aids much when considered with other signs and symptoms. The greater the degree of deafness, the more severe the middle ear inflammation, as a rule. So much for the value of the otoscopic examination. This is treated of first, because it is of the greatest importance, more important, in my opinion, than either the mastoid examination or the general examination.

(B) Examination of the mastoid region. In the great majority of mastoid cases, more or less mastoid tenderness exists. In many cases of middle ear suppuration there is considerable tenderness during the first two or three days, especially when there is little or no drainage through the drum membrane. I do not believe that such tenderness indicates immediate mastoid operation. This tenderness is frequently due to intense vascular engorgement of the mastoid cells and may wholly subside in a day or two after good drainage is established through the drum membrane. It is the *persistence* of mastoid tenderness that is of serious concern, especially when it persists after the establishment of good drainage through the drum membrane. Frequently a patient on whom a mastoid operation is urged, will advocate delay because the mastoid tenderness is not so acute as in the beginning of the ear trouble. This is not to be relied on as indicating that resolution is progressing without the formation of pus. Until all trace of tenderness is gone the patient is not safe, and even then, the case is a doubtful one if the middle ear inflammation is not in like manner subsiding. The tenderness is usually found by firm pressure at three points—over the antrum, over the tip and over the point of exit of the mastoid emissary vein. The tenderness is usually most acute during the first twenty-four hours, and decreases thereafter to increase again to great severity only when the outer table or its periosteum becomes affected. In such cases edema, of course, is found.

Tenderness over the mastoid is then not to be relied upon as the sole guide to the mastoid operation, but must be considered along with the otoscopic findings and the history of the case. The time limit for the persistence of mastoid tenderness can not be arbitrarily set. In no place does experience count for more in forming safe judgment. Delay in order to be absolutely sure that pus in considerable quantity will be found, is manifestly unsafe. It is, after all, safety to our patients rather than a desire to prove ourselves infallible, that should influence our judgment. While exceptions can be taken and are freely admitted, I believe it is good judgment not to delay over seven days from the onset of the middle ear abscess, provided at the end of that time, *distinct mastoid tenderness exists,* and no *abatement of the middle ear inflammation is seen.* There are a few cases that will prove exceptions, some that will have to be opened

earlier and some that can safely run longer and finally recover without operation.

(C) The history of the case and the general signs and symptoms. In the history of the case the following points are worthy of note: mastoiditis following the acute infectious diseases is insidious in its onset and greater destruction is apt to result before pronounced signs and symptoms arise. This is likely due to the impaired resistance and is especially pronounced in scarlet fever, measles, and typhoid fever. A history of present or past tubercular trouble is important, for tubercular mastoid destruction is difficult to cure and recurrences are more frequent. A history of diabetes makes the prognosis more grave. The tendency is to delay operation in such cases, even though the mastoid indications are plain. When we realize that in these very cases the resistance of the host to infection is poor it is all the more imperative to operate. The number of deaths from fatal mastoid complications secondary to scarlet fever, typhoid, diabetes, etc., prove the truth of this statement; because investigation of such cases will usually show that there was unwarrantable delay in operating. I reported such a case at the last meeting of the State Society, wherein I was at least partially to blame, as a consultant, for the man's death. It was a case of diabetes in which middle ear abscess occurred. Operation was advised, but not sufficiently insisted upon. After six or eight weeks of apparent absence of mastoid signs, a sudden convulsion occurred and death followed in twelve hours. A large epidural abscess was discovered. There is hardly a doubt but a timely operation would have saved his life.

I reported a similar case at the American Medical Association meeting (in July, 1905), with this difference, that the mastoid abscess complicated typhoid, and thrombosis of the lateral sinus was responsible for the death. Frequently are the mastoid signs thus masked by coexisting diseases.

As to the general signs and symptoms, such as chills, fever, nausea, vomiting, etc., these are rarely met with in uncomplicated mastoid cases, except in children. In adults the general signs and symptoms are of slight consequence, until intra-cranial complications arise. In infants, however, high fever, vomiting and occasionaly convulsions occur readily from middle ear suppuration. Such symptoms when otherwise not accounted for, should prompt a careful otoscopic examination. In adults, a slight but persistent rise of temperature occurring in the course of middle ear suppuration is suspicious of mastoid involvement.

As to a differential blood count, this is generally regarded to be of no value in determining upon the mastoid operation, although, of course, of great valve in determining complications that produce general infection.

As to the use of vaccines: May we delay operation on the mastoid in order to await the result of curative vaccine injections, which have recently been advocated with some enthusiasm? I should like to have the opinion of those who have had greater experience in the use of vaccines in other suppurative processes. Personally, while I am trying vaccines in suitable cases, so far I have seen no positive results. While the future may possibly hold much in store for us, I believe that at present it is dangerous to postpone a mastoid operation when the indications are positive in order to await the result of vaccine injections.

In conclusion, *a timely and thorough mastoid operation*, we should remember, *serves two distinct surgical purposes—it cleans out the mastoid, including the antrum, and in so doing efficiently drains the tympanic cavity*. The latter purpose should not be lost sight of in the discussion of this subject. No one who has opened or seen opened a hundred or more mastoids can fail to be impressed with the rapidity with which the tympanum regains a normal condition after the mastoid operation. Efficient drainage in the cure of infection of other cavities in the body has become a well established surgical procedure. In ear work it is of no less importance. It is not unlikely that we will see in the next decade fewer chronic discharging ears because of more prompt operating in the acute cases.

PROPHYLAXIS AND TREATMENT OF ACUTE OTITIS MEDIA.*

By WM. BARCLAY STEPHENS, M. D., San Francisco.

The recognition of the causes and conditions conducive to attacks of acute otitis media; their removal or prevention, or, failing in this, the rendering of their effects as innocuous as possible, constitutes prophylaxis in this disease.

Congestion of the mucus membrane of the middle ear renders it vulnerable to pathogenic bacteria, and thus liable to an otitis, whether the congestion be the result of an infectious disease, a simple catarrhal condition of the naso-pharynx or some renal or cardiac disorder. Abnormal conditions of the rhino-pharynx are by far the most common source of middle ear trouble. From this proposition the corrollary may justly be drawn that a normal rhino-pharynx is the most certain insurance against acute otitis media. Histologically speaking, the cartilaginous portion of the eustachian tube belongs more to the rhino-pharynx than to the ear; the mucus membrane being identical in kind with that of the pharynx, inflammatory conditions in the pharynx are apt to involve the tubes. At the isthmus the type of mucus membrane changes from the columnar ciliated to the tympanic form. This change in the character of the mucus membrane tends strongly to limit the inflammation at this point. This change coupled with the movement of the cilia toward the pharynx, constitutes part of nature's protection of the middle ear.

Acute otitis media is seldom a primary condition, almost invariably it is secondary to some preceding or contemporaneous inflammation of the pharynx, about the only exceptions being in infectious diseases and the accidental entrance of fluids, as in

*Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

swimming, or in the use of the nasal douche. Our most fruitful prophylactic efforts then, are practically limited to one end, namely: the attainment and maintenance of a normal rhino-pharynx and adnexa. We are powerless to prevent congestion of the middle ear, arising during the course of a general disease; but we can by keeping the pharynx and tubes in a healthy state, provide the most certain deterrent to the invasion of the ear by bacteria. Healthy mucus membrane is able to care for the numerous bacteria that are normally present in the pharynx. The striving for this desideratum, a healthy naso-pharynx, should be begun in early life and be unremitting. The means to this end are to be found in hygiene, internal medication, and local treatment.

Hygiene—Hygiene has for its main object the prevention of "catching cold," that is, keeping up the bodily resistance so that it may not be susceptible to every draft and atmospheric change. These hygienic practices should begin in infancy. The most important of these, to my mind, are good air and plenty of it, bathing, exercise, proper food and clothing. Keep the children in the open air. Encourage them in games requiring action in the open. Give them wagons, bicycles, and go-carts; garden tools and a sand pile. Have them sleep in a room with a large amount of ventilation from one side, or if the climate is not too severe, in a properly constructed sleeping porch.

Bathing—Keep the skin clean and active. Accustom it to air. In addition to a weekly warm tub bath—a daily morning cold bath, either plunge or sponge, the temperature to be in accordance with the reaction; the bath to be taken quickly and followed by a brisk rub with coarse towel. If perfect re-action does not occur after a full bath, then sponge the neck and chest. Swimming under proper circumstances gives exercise and exposure of the body to the air; but must not be prolonged, and if in the surf, the ears should be protected and diving seldom indulged in.

Clothing—Do not swaddle in clothing; and yet have sufficient for protection. Judgment must be used. The puny, anemic individual will require more than the husky fellow with red blood rioting through his veins. Personally, I favor next to the skin, one of the light, porous, linen underwears, and in cold weather, light woolen pulled over it. It might in this day of automobiles be fitting to mention protection of the ears from the cold and rapidly moving air, especially in young children.

Certain constitutional conditions are especially prone to bring about conditions favorable to the development of acute otitis media. Each will demand its appropriate treatment, selection of which treatment will ofttimes demand the best skill of the attending physician. Of these conditions, may be mentioned, marasmus. lymphatic temperament, uric acid diathesis.

Local Treatment—Local treatment consists of keeping the parts free from pathological secretions and the application of appropriate remedies for the removal of the causes; the restoration of the nasal breathing in the various forms of hypertrophic rhinitis; the removal of hypertrophied tonsils and adenoids. Of the exanthemata, measles and scarlet fever are the ones in which we are most apt to have involvement of the ears, the aural condition seeming to be part of the general eruption. This we cannot prevent; but we can try to prevent the entrance of additional infection from the pharynx. Keep the pharynx and nose cleansed with alkaline antiseptic washes, followed by swabbing with one-half per cent solution argenti nitratis, or instillation of a solution of 5% to 10% argyrol, or introduce, as suggested by Weiss, 1% yellow oxide of mercury ointment into the nares. The same should be done in grip and typhoid fever. Otitis in typhoid fever is apt to occur in the fourth or fifth week of this disease. According to Oatman, this is due to the absorption of the little pad of fat in the anterior wall of the eustachian tube, thus rendering the tube more patent than normal. The same would hold true of other wasting diseases, and atrophic conditions of the nose and throat. Care should be exercised in children, who are suspectible to otitis media, in blowing the nose; especially when they have rhinitis—for it is easy to force mucus from the pharynx into the ears, through the short, straight, and rather patent tubes of early life.

It is my purpose in speaking of treatment of acute otitis media, to be practical as possible, avoiding technicalities. What is here meant by acute otitis media, is an inflammation of the mucus membrane of the middle ear, which if it does not subside, or is not aborted by remedial measures, goes on to the exudation of serum, sero-mucus, or sero-pus. In common parlance the early stage is known as earache and the later as abscess of the ear. For the relief of the pain and the cure of the disease, all sorts of expedients are resorted to by the laity, under the advice of solicitous friends and relatives. Much harm and little good is done by the various ear drops. All oily and irritant solutions are to be absolutely forbidden. The first afford excellent nutrient media for the growth of bacteria, and the second cause dermatitis of the canal. Likewise, figs, onions and various other kindred substances should not be put into the canal. I usually tell my patients that if heat applied externally, and douching the ear with hot water, does not relieve, a physician should be sent for. The instillation of hot water or a solution of cocain, are the only things I approve. Morphin may be added; but laudanum stains and prevents an accurate diagnosis, when the membrana tympani is inspected. At the outset I may say that I regard incision of the membrana tympani as the remedy, *par excellence,* in acute otitis media. However, I do not mean to say that it is necessary in every case.

Following an obstruction of the eustachian tube by a simple catarrh or by a congested adenoid, there may be, after absorption of the air, an exudation of serum into the middle ear. The rapidity with which the filling up of the middle ear with serum may oc-

cur, especially in young children, is marvelous. I have seen ears with no visible inflammation and an indrawn membrana tympani, in which an hour later the membrana tympani is bulging out and the cavity filled with serum. The inflammation of the tube being largely limited by the change of the mucous membrane at the isthmus, so that the inflammation if extending into the middle ear is of mild type and carries with it only harmless bacteria. Only the lower portion of the middle ear—the hypo-tympanum—is usually involved, and the change in the mucus membrane slight.

In this class of cases when seen early and the amount of fluid is not great, we are justified in trying to abort the attack, before resorting to a paracentesis. Calomel or castor oil should be administered. First the condition of the nose and throat is to be looked into and in fact this should be the first step in all cases of acute otitis media. First cleanse the naso-pharynx with an alkalin solution, adrenalin chlorid 1-5000, or other supra-renal capsule solution is either instilled into the nares with a pipette, or with a cotton carrier an application is made to the congested adenoid and orifice of the eustachian tube. Then the ear may be inflated with a Politzer bag with the hope that the patency of the tube may be restored, the adrenalin having relieved the congestion about its orifice. An application of one of the silver preparations is then made posteriorly, with a curved cotton applicator; or in case of small children, 10% solution of argyrol is instilled into the nares, with a dropper, the child lying upon its back. The object of these measures, of course, is the re-establishing of ventilation and drainage of the ear through the tube. The alkalin solution cleanses out the mucus and some of the bacteria which are usually present in the pharynx, thus rendering less likely their entrance to the ear. The method of making the alkalin application is probably worthy of note. In children, a syringe with a soft rubber tip is my choice—the child lying on its side, the solution is injected gently and allowed to flow out of the mouth and opposite nostril. In some intractable children, a small amount may be dropped into the nostril and a syringe with a large tip used to aspirate the solution and secretions from the nose. In adults or older children, a free spraying with an atomizer or a douche cup may be used. If the douche cup is used, the fluid should be introduced through the more constricted nostril and allowed to flow out through the less obstructed one. Take care not to swallow during the process or to close off the nose too much when blowing it. Dry heat applied, in the form of a hot water bag, or hot salt, or electric heating pad, is usually grateful to the patient.

These measures failing, the membrana tympani should be opened in the posterior inferior quadrant. A simple puncture is all that is necessary. Preceding paracentesis, the canal is rendered as aseptic as possible. If no anesthetic is to be administered, and in the majority of these cases none is necessary, alcohol is used for the cleansing of the canal, for the reason that it does not macerate the membrana tympani, leaving it dry and thus easily penetrated by the knife. The knife must be very sharp. The knives usually made for the purpose are rarely sharp enough, so I generally use a narrow-bladed cataract knife. The incision is made quickly, and care taken not to wound the mucous membrane of the inner wall of the ear. Done in this manner, the operation is almost without pain. The membrana tympani is often bulged out and looks like a blister. The evacuated serum is sterile or shows only innocuous organisms. The canal is now wiped out with dry cotton and sterile gauze is placed in the canal, and the ear covered with cotton. Provided that the pharyngeal condition has been remedied, the membrana tympani is closed within twenty-four to forty-eight hours. If, however, the cause has not been removed, the ear may continue to discharge for a long period, taking on a sub-acute or a chronic form, the discharge being a thick tenacious mucus.

Under these circumstances it will usually be found that an excessive amount of adenoid tissue is present and its removal will be followed by a rapid improvement in the ear condition, the otorrhea often ceasing in a day or two following the adenectomy. Irrigation may at times be necessary if profuse discharge continues. A boric acid or normal salt solution is generally used—the temperature 100° to 106° F. In these cases complications—as mastoiditis—are seldom seen, unless the ear becomes infected.

The introduction of the element of infection immediately adds to the seriousness and severity of otitis media, the severity of the attack being in proportion to the virulence of the infection, and the lack of resistance of the individual, and calls for correspondingly vigorous and prompt treatment. The question naturally follows, as to how we are to tell at the outset whether the attack is one arising from simple tubal obstruction, without any or only harmless infection, or of a more severe type. In this we are guided by the history, constitutional symptoms and age of the patient; the appearance of the membrana tympani and canal and the condition of the nose and the pharynx. If the patient is a child, and in conjunction with a cold in the head, has earache accompanied by slight or no rise of temperature, no prostration, a membrana tympani indrawn or bulging, but translucent and shining, slight injection and no involvement of the canal, a diagnosis of the simple or mild form is justified and treated accordingly. But if on the other hand, the attack comes on during the course of an infectious disease, with marked exacerbation of the constitutional symptoms, membrana tympani bulging, congested and dull, bulging of Schrapnell's membrane, adjacent portions of the canal congested, and tenderness of the mastoid, a virulent type is inferred and prompt and energetic treatment indicated. Between these two extremes will be found doubtful cases, but in case of doubt, assume to be virulent.

In these cases there is not the tendency for the inflammation to be limited to the hypo-tympanum,

but rather to spread to the contiguous parts and with the drainage through the tube shut off, the pressure of the fluid first forces out the membrana tympani. This failing to rupture, it may find its way into the mastoid cells, the labyrinth, the carotid canal, or some hiatus in the inner table of the skull or facial canal. In young children, leptomeningitis may occur through the nerve sheaths or blood vessels or sinus thrombosis through the veins. It is claimed by some that the membrana tympani of the infant is more resistant to rupture than that of the adult; be this true or not, the adjacent parts are more liable to involvement than in the adult, the mastoid antrum being almost a part of the middle ear, and the bone being so soft as to offer no resistance, when once necrosis begins.

The severity and extent of the involvement are variable, the infection not always producing the same amount of disturbance. In certain years, infectious diseases seem to take on a more severe form than in others—so with acute otitis media. There seem to be in some years and seasons more virulent types than in others; however, as we look upon scarlet fever with more dread than measles, so we would fear more a streptococcus than staphylococcus infection. There is no positive means of knowing what the infection is, until after opening of the membrana tympani. Then a smear or culture usually gives us definite information. The streptococcus, staphylococcus, pneumococcus, and streptococcus capsulatus are among the more common organisms found.

In these cases no time must be wasted in palliative measures or efforts to abort the attack, but prompt and thorough opening of membrana tympani is demanded. As a rule, a general anesthetic is necessary. The preliminary cleansing of the canal by irrigation with bichlorid 1-5000, boric acid solution or even boiled water, or with alcohol, is completed and the canal dried before anesthetising, so that advantage can be taken of primary anesthesia. If only the main cavity of the middle ear seems involved, the incision is made with a straight knife along about one-third of the posterior and inferior border of the membrane. If Schrapnell's membrane is bulging or if congested, showing trouble in the attic, a curved knife is used, following the same line of incision, but the incision is made from below upward, and the point of the knife passed on up into the attic, dividing some of the folds of mucous membrane surrounding the ossicles; or the knife can be withdrawn and a separate opening made through the Schrapnell's membrane. If there is much mastoid tenderness, I frequently turn the knife posteriorly and superiorly, and cut out through the canal, that is a modified Wilde's incision. Having opened the ear in one of these ways, we have made our best effort toward a cure and prevention of complications. If the exudate in the ear is thick and does not easily come out, the ear may be aspirated with a Siegele otoscope. Some advocate this as a routine practise, but I am as yet in doubt as to its advisability. The canal is cleaned with either cotton or by irrigation, and gauze inserted. In ordinary cases the ear is irrigated, as a rule, every three or four hours. If the discharge is profuse, more frequent syringing may be necessary or if there is mastoid tenderness, to promote the discharge, very frequent syringing with solutions as hot as can be borne.

The solution used is not so important as the way it is used—boric acid solution, 1-5000 bichlorid, boiled water or normal salt solution. I usually order for the irrigation, a syringe in the form of a rubber ball with a soft rubber nozzle. It is all in one piece and being of soft rubber may be sterilized by boiling. The attendant is directed to have the temperature of the solution, 100° to 120° F. in accordance with whether cleansing only is desired or also the effect of heat locally applied. If for the latter purpose, a fountain syringe may be substituted. The canal is straightened by traction upon the auricle and the tip of the syringe inserted one-fourth to one-half inch in the canal, and a gentle but firm and even pressure is made upon the syringe. See that there is no air in the syringe as the noise of the bubbling air is distressing to the patient. After irrigating, dry with cotton and insert a piece loosely into the canal. If mastoid tenderness continues in spite of the syringing, an ice-bag may be applied to the mastoid from twelve to twenty-four hours. If ice is not well borne, heat may be tried. I have seldom seen any benefit from the application of leeches; but if they are used, about six should be applied at once, four posteriorly and two anteriorly to the ear. The canal should be tightly plugged to prevent the leeches from taking hold there. The leeches leave the parts tender and so obscure somewhat, the presence of mastoid tenderness.

Assuming that we have had an ordinary case to deal with, following the incision of the membrana tympani, there is seen a marked cessation of the pain and constitutional symptoms, the patient in many instances having lost much rest, falls quickly into a quiet sleep. The discharge is profuse for a few days, the canal being kept clean by the irrigation. Then the discharge begins to lose its purulent character, being more scanty and mucus-like—syringing is done less frequently and presently discontinued for dry cleaning. The incision gradually closes, and the ear is restored to health in from ten days to two weeks. If on the other hand the discharge after a few days grows more profuse and purulent, and mastoid tenderness persists in spite of the douching, and application of ice or heat, and constitutional symptoms continue, the mastoid will probably have to be opened. Occasionally a day or two after opening the ear, there appears in the incision and over the membrana tympani a white membrane or exudate, which can only be removed by forceps. It re-forms in a few hours and greatly obstructs drainage. The discharge is thin and serous. I have not found any one organism in all cases. The membrane usually ceases to form after three days; but I have seen it persist for over a week. It causes much pain by obstructing drainage and also in its removal. It is possible that one

of the digestive ferments might help to cleanse off the membrane; but I have not tried them. Persistent removal with forceps has effected a cure in all cases.

In the grip, we ofttimes have otitis media, not differing from those cases occuring without the grip, except that they are more severe; but the true grippal ear is rather characteristic. The membrana tympani is apt not to be bulging as a whole; but rather in the form of blebs, either filled with clear serum or a sanguineous fluid—ecchymoses of the canal and even small hematomata—a bleb or two on Shrapnell's membrane. The membrana tympani being incised, and each of the blebs opened, there is an escape of bloody fluid and serum. Some of these blebs are on the membrana tympani and not connected with the middle ear. There is much swelling of the mucus membrane and of the submucus tissues of the middle ear, and drainage is only fairly good. The discharge is serous and continues so to the end, unless other infection is added, when it may become more pus-like and profuse. There is apt to be marked pain of the mastoid and in the muscles of the neck, persisting for several days. Iodin painted on, has given me the best results. The existing grippal infection seems to afford especially fertile soil for other infections—hence complications are common and should be carefully watched for.

In scarlet fever, involvement of the ear is common and occurs during desquamation; that is, in the third or fourth week, and the process is exceedingly rapid. It seems to be as a rule, a streptococcus infection engrafted upon the specific scarlatinal infection. Necrosis of the mucus membrane, overlying the bone, occurs early and, the bone being deprived of its nutrition, also necroses. The membrana tympani ruptures early and tends to slough away. Involvement of the mastoid and labyrinth is common. It is the most destructive form of otitis media we have, and the one yielding least to treatment. We therefore should redouble our prophylactic measures, and be most prompt in making a paracentesis.

In diphtheria, the ear is not nearly so frequently involved as in scarlet fever, and there is little tendency to spontaneous rupture of the membrana tympani.

In measles, it is fairly frequent, arising chiefly during desquamation; that is, in the second or third week. The other infectious diseases do not seem to have any especial predilection toward the production of acute otitis media, except by giving rise to congestion of the mucus membrane and so making it more liable to infection—hence reasonable prophylaxis should be exercised in these cases and in the presence of any wasting disease.

In our attention to the ear, the general bodily condition must not be neglected. See that the bowels are kept well cleared out and that proper nourishment is administered.

I desire to enter a special plea for the recognition of the importance of acute otitis media in infancy and childhood. Many an infant has died from meningitis caused by unrecognized acute otitis media and many a child has grown up with a discharging ear, or handicapped by impaired hearing from the same cause. I wish again to call attention under prophylaxis, tothe prominent place colds and abnormal conditions of the rhino-pharynx play in the etiology of acute otitis media; and under treatment, to emphasize the value of early paracentesis and the necessity of asepsis at the time of the incision, and in the subsequent treatment of the ear.

PATHOLOGY OF ACUTE PURULENT OTITIS MEDIA AND INDICATIONS FOR OPERATIVE INTERFERENCE IN ACUTE MASTOIDITIS WITH REPORT OF INTERESTING CASES.*

By CULLEN F. WELTY, M. D., San Francisco.

In the majority of cases, the primary process in the middle ear is that of acute, catarrhal inflammation which is characterized by the presence of the exudate which develops rapidly, accompanied by more or less reaction. This effusion may be purulent or muco-purulent in character and involves the whole of the middle ear, and is usually of short duration (by the middle ear, we mean eustachian tube, tympanic cavity and mastoid cells). The anatomical changes consist of the marked hyperemia which is followed by a muco-purulent exudate into the interstitial tissue of the tympanic cavity, not so much marked in the eustachian tube and the lining membrane of the mastoid cells. This exudate in the middle ear consists of a thick, cloudy fluid mixed with mucus and pus cells, containing many blood vessels. The greatest predisposing factor in the causation of this condition is an obstruction of the eustachian tube.

However, there is another theory that is more popular to-day, and that is of germ infection. The question naturally arises, did germ infection of the middle ear cause the exudate and closure of the tube, or was the exudate produced by the closure of the eustachian tube, and afterwards infected? I am inclined to the theory of germ infection primarily. It must be accepted that acute otitis media has its origin in bacteria infection and that the diplococcus pneumonia and streptococcus pyogenes are most frequently found in the secretion and are the exciting cause of this form of infection.

The following have also been found: Staphylococcus pyogenes alba and aureus, bacillus pyocyaneus, pneumonia bacillus, bacillyus coli, menigo-coccus intercellularis, the diphtheria bacillus in middle ear diphtheria, the tubercle bacillus, the gonococcus, influenza bacillus, the typhoid bacillus in the tympanic cavity of patients who have died of typhoid fever. It was shown by Madoleczny that immediately following paracentises, the secretion cultured in a pure media showed that the streptococcus occurred, just as often alone as in combination with other pathogenic micro-organisms.

---

*Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

Politzer says, undoubtedly the streptococci make their appearance late in the disease and approach by way of the eustachian tube or a rupture of the drum membrane. It is also noted that in such infections, all the symptoms are more aggravated. There is more likelihood of a mastoiditis, an extradural abscess, and cerebral complications of any kind. Individual predisposition, and resistence on the part of the patient have a great deal to do with this whole subject of infection. The invasion of pathogenic micro-organisms into the middle ear takes place most frequently by the eustachian tube. Secondarily, by the lymphatics. The third entrance is by the blood through the walls of the vessels. The fourth entrance from a perforated or intact drum membrane from the external auditory canal. The terminations of an acute middle ear inflammation are: first, rapid recovery; second, the transition of the inflammation into a chronic form of secretary catarrh which either subsides gradually or leads to adhesive changes in the sound conducting apparatus, which constitutes one of the large forms of chronic deafness; third, acute purulent inflammation of the middle ear with perforation of the tympanic membrane; fourth, extension of the inflammation to the mastoid process with consecutive formation of abscess within them; fifth, extension of the process to the dura mater, pia mater, and neighboring sinuses; sixth, death through general septicemia without a diseased condition of the sinuses.

Of the terminations, the one that we will direct our attention to is that of acute purulent inflammation of the middle ear. The inflammatory changes of the mucous membrane are more intense and the discharge which is more copious, contains a greater number of pus cells. The pathologic changes are invariably distributed over the entire mucus membrane of the middle ear. Even in cases where no mastoid symptoms are present, the changes have been found at postmortem. The effect of the chemical bodies, produce the reaction that is characterized by hyperemia, exudation, diapedises, of round cells and the formation of new blood vesels. If the hyperemic stage progresses we find various changes dependent upon the intensity of the inflammation. The mucosa becomes more deeply red or mottled from small hemorrhagic areas, the mucous membrane becomes more swollen, the tympanic cavity is filled with a muco-purulent or purulent exudate, microscopically loosened or exfoliated epithelium.

The sub-stratem is filled with round cells, blood vessels are distended and small hemorrhagic areas are scattered throughout the mucosa. When the inflammation is intense as in scarlatinal otitis, we will notice areas of necrosis scattered throughout the membrane. These areas of necrosis correspond to the deposit of the micro-organisms. It has been clearly proven by Politzer and others that pus may remain in the mastoid cells for a long time and finally become absorbed. However, this condition only takes place under peculiar surroundings. First, pus must not be absolutely confined or it would produce pressure symptoms; second, the micro-organisms must not be of the virulent type. The symptoms of acute purulent inflammation of the middle ear are pain, fever, and general malaise. The most important of these is pain, which is usually very intense, radiating to all parts of the head and down the shoulder of the same side. A coinplete remission is seldom observed. It is made worse by any effort on the part of the patient. Occasionally, painful points especially on the vertex in the course of the trigeminus. In rare instances the disease is ushered in by vomiting, chill, and vertigo. An elevation of temperature from 1 to 4 . In children the temperature is invariably high.

Appearance of the drum-membrane: In the primary stage there is a congestion about the handle of the maleolus, and the osseous meatus is very much reddened near the membrane. In a few hours the membrane may be scarlet red or livid, ecchymotic and swollen. In the otitis of influenza the membrane is covered with an exudate or with hemorrhagic bulla. The posterior segment is more prominent, which indicates a collection of fluid within the tympanic membrane or within the tympanic cavity. The perforation usually occurs in the posterior inferior quadrant and the anterior inferior quadrant. They are as a rule small and very hard to find. Large perforations are due to the more virulent infections. Double perforations are usually dependent upon tubercular process of the ear.

The Terminations.—The terminations of acute purulent middle ear inflammations are: First, cure by complete restoration of the hearing; second, transition of the purulent inflammation into a seromucous catarrh after cicatrization of the perforation; third, disturbance of hearing after closure of the perforation due to connective tissue adhesions in the tympanic cavity; fourth, permanent loss of hearing due to invasion of the labyrinth in cases of infectious diseases; fifth, inflammation of the mastoid cells. This is especially so in influenza and in infectious diseases; sixth, destruction of the membrane, perforation of the labyrinth, caries and necrosis of the tympanic wall and ossicles with exfoliation of the same. This latter is observed more particularly in scarlatinal and diphtheretic infections, more rarely in measles, typhoid fever and tuberculosis; seventh, probably in death with an intact or perforated tympanic membrane due to cerebral infection; eighth, chronic middle ear suppuration with the many complications that naturally follow.

I have outlined this part of my subject very carefully so as to make each step in the progress of the infection important. It is my belief that when an individual case is studied with such care the threatening symptoms, or rather the symptoms that call for operative interference will be better appreciated. If such a routine is followed, the physician will not be responsible for the death. *You must always bear in mind, that in mastoid surgery a competent man can only do good.* Occasionally a case will be operated that would have recovered

without operation. *On the other hand by delay, in a shorter or longer time a life will be sacrificed.* So reasoning, would it not be better to do ten unnecessary operations rather than sacrifice one?

In a given case of acute purulent otitis, accompanied by pain and redness of the drum membrane, I prescribe calomel 1/10 to 1/5 grain every half hour until one grain is taken, followed in six hours by magnesia. Patient is put to bed, tampon, saturated with hot Burrow's solution put in the ear and gauze about three inches in thickness covered by oiled silk saturated with hot Burrow's solution for the outside to cover the ear and mastoid. In many instances the pain will entirely subside, the drum membrane become pale and the patient be well the next day. However, if the pain does not subside apply additional heat to your outside dressing, which may be either wet or dry. If this does not accomplish what you wish in the course of six or eight hours, the dressing must be removed and the ear examined. By this time it will be noted that there is an intense redness of the drum membrane and more than likely it will be bulging. Some temperature, may or may not be pain on deep pressure over the mastoid, may or may not be bulging of the posterior superior wall of the meatus near the drum membrane. Free incision of the drum membrane is indicated, and the same procedure in regard to the dressing that I have spoken of before. If the symptoms have not been relieved within the following twenty-four hours it is more conservative surgery to open the mastoid process. My reason for this is described in a few words,—*what causes the pain? Retention of pus,* and as the drum membrane has been freely incised, where can the retention be? *The mastoid cells are the only remaining place.* It is more than probable that there will be retention in but one or a few cells. At the same time to delay, subjects your patient to added risk of cerebral complications. No doubt some of you may use and prefer cold applications to the mastoid. I say they should not be used at all for the following reasons: That cold so numbs the parts, that your real symptoms are masked and that is the worst possible thing to wish for. I wish to make another broad general statement at this place. If following a free incision of the drum, the pain is not relieved by the application of moist heat, your case should be operated. A patient with acute mastoiditis should never be given a narcotic of any kind for the reason that it masks the very symptoms that you are watching so carefully.

In another instance you see the patient for the first time on the third day of the disease. The drum membrane has ruptured and there is a small perforation, the plain is not so intense, and the temperature almost normal. Apply the same dressing and medication that I have recommended in the beginning and more than likely it will get well.

Patient seen for the first time on the fourth day, small perforation of the membrane, bulging of the membrane, bulging of posterior superior wall of the meatus, some tenderness of the mastoid region, some temperature; free incision of the drum membrane, with treatment and dressing such has been outlined before. If within 24 hours all the symptoms are not better the safest procedure is that of operation.

After the 10th day of suppuration from the middle ear, with a bulging of the posterior superior wall, an operation should be done at once, without any other indication; it invariably speaks for pus retention. It matters not where you find it, in acute or chronic suppuration. If after the 20th day a profuse discharge continues, it is better, and more conservative surgery to drain. This is not because of retention, but because of large pneumatic cells with extensive inflammation and destruction.

Another indication for operation is where a discharge continues for more than six weeks. During the later weeks adhesions have taken place, and more will follow if allowed to continue. In other words there will be an impairment of hearing, and to avoid this and give your patient the advantage of everything that he deserves, an operation is indicated.

We must bear in mind, that in so operating cases such as I have outlined, the discharge from the ear in many instances will entirely disappear in from four to six days. The delayed cases are the ones that produce the trouble, because of the pathologic changes that take place as the disease progresses and as the retention symptoms develop. If after an acute purulent otitis has progressed steadily for the good, the discharge much lessened, suddenly, pain in the mastoid develops, we should operate at once. If after the drum membrane has entirely healed, there is acute pain in the mastoid region, immediate operation in indicated. Increase of surface temperature over the mastoid region, always speaks for mastoid involvement and the safest procedure is that of operation. Infiltration and edema over the mastoid cells, calls for operation. It may be due to perforation of the mastoid, or to a periostitis produced by diseased mastoid, or to an occlusion of the mastoid vein. Facial paralysis occurring during middle ear inflammation always calls for immediate operation.

You must bear in mind that practically all cerebral complications call for immediate operation. If you are quick enough, you may head off the disease, and save the life of the patient. Desperate diseases require heroic efforts, and at times a mistaken diagnosis may be made, and an unnecessary operation, with a possible fatal termination, that must not deter you from using your best judgment at all times.

Case 1. Referred by Dr. C. L. Biglow, female, 22 years. Wife of a doctor. Always in good health until the present illness which began 24 hours ago with very acute pain in the right ear. She was given a purge, and the various kinds of drops for the relief of pain, but with slight effect. I was called the morning of the second day, found the patient had a temperature of 101°, very acute pain in the ear, which radiated to the whole side of the head.

The surface temperature of the mastoid increased in comparison with the other side. Sensitive to pressure and percussion over and about the mastoid, bulging of the membrane with small perforation in

the posterior inferior quadrant. Made free incision of the membrane and applied dressing as before spoken of. Told patient that if she was not improved by the following day, an operation was indicated and would have to be done at once. The following 24 hours, the pain was probably as severe as before. A very restless night, requiring morphine. Following morning, the temperature was 102.5°, surface temperature increase, bulging of the posterior and superior wall. Not so much pain because of the morphine. Entire side of the head sensitive to pressure and percussion. Operation two hours later.

Operative Findings.—Large pneumatic mastoid. The individual cells had broken down making one large cavity which was completely filled with saneaous pus and was under considerable pressure. Attic opened and operation completed. Bacteriological examination, pure eultures of streptococci. These findings explained the rapidity of the progress. Ear free from pus in six days. Posterior wound healed completely in 16 days. Three weeks following the operation, hearing normal. This case illustrates very beautifully how necessary it may be to operate early.

Case 2. Clinical Case: Male, 27 years. Traveling salesman. Always in good health until the present illness which began three weeks ago, with acute pain in the left ear. This increased in severity for a short time and was relieved when the ear began to discharge. Since that time has not troubled him much with the exeeption of an inereasing fullness on that side of the head for the last ten days. The discharge from the ear has become very offensive.

Examination.—Temperature, normal, no pain on this side of the head complained of. On deep pressure, pain is elicited over the tip of the mastoid. No increase of surface temperature. Bulging of the posterior superior wall was so great that the landmarks of the tympanic cavity could not be seen at all. Bulging of the membrane and a small perforation low down. Immediate operation advised and done.

Operative Findings.—Large pneumatic mastoid. All the cells destroyed. Pus under considerable pressure. Attic opened. Free incision of the drum membrane. Bacteriological examination; pneumonic infection. Ear dry in four days. Posterior wound healed completely in ten days. The patient left immediately.

As to the ultimate outcome of the hearing, I am not able to say. As to the discharge of pus, continued for about six weeks prior to operation. If his hearing is impaired at all, it is due to the delay of an early incision of the drum membrane which would probably have relieved all his symptoms. I report this case to show you the importance of the bulging of the posterior superior wall occurring late in a purulent otitis. This was my only indication for operation.

Case 3. Referred by Dr. Marshall: Infant 11 months. Bottle-fed baby. Never had infectious disease. Never entirely healthy. Three months ago noticed that for several days the child was very restless and had fever and a discharge of pus from the right ear. Shortly a swelling appeared back of the ear that was incised (Wild's incision) and a teaspoonful of pus discharged. Was dressed every second day for two weeks and healed. Shortly following swelling appeared back of the ear and at the outer angle of the eye of the same side. Both incised and dressed every second day for about six weeks. Neither wound would heal. The discharge of pus continued from the ear following all three operative procedures. Finally the case was referred to me. The child was much emaciated, suffering very much from malnutrition. By probe, roughened bone was detected back of the ear. Could not detect anything by a probe from the sinus at the other side of the eye. The meatus was so swollen that I could not see the membrane at all. The discharge from the ear was foul and offensive. Temperature 102°. Pulse very rapid.

Operative Findings.—In infants the mastoid cells are not developed, so I knew the perforation must be above and back of the ear, i. e the antrum was perforated. This perforation was made quite large to allow free access to the discharge of pus and further search made for the fistulous communication which was not found. However, I did find roughened bone above the perforation. In curetting it away the dura was uncovered and the operation was completed after an incision of the drum membrane, which could not be seen. Wounds and ears dressed every second day. Discharge from the fistula about the eye stopped in four days. Discharge from the ear stopped in three weeks. Discharge from the fistula back of the ear stopped in four weeks. Child apparently well and has remained so.

I speak of this case partieularly to show you the fallacy of Wild's incision whieh should never be used at all. Had this patient had the proper attention at first, there would not have been a fistula and the patient and the family would have been relieved of much trouble and great anxiety. The fistula about the eye was due to the roughened bone above the perforation, and when removed the fistula closed. By enlarging the bone perforation and free paracentesis, good drainage was established, and the child made a recovery.

Case 4. Referred by Dr. Kugler: Female, 18 years old. Acute purulent otitis for the last four weeks. Some pain during the first week. Praetieally no discomfort until a few days ago, when a swelling was noticed back of the ear. Temperature 102°. She had been treated by the family physician, who told her to syringe the ear twice a day, and everything would be all right.

Examination.—Four weeks after the initial onset. Increased surface temperature over this mastoid in comparison with the other. Temperature 102°. Pulse 180. Indefinite pain over the whole side of the head. A decided swelling of the mastoid and particularly painful over the mastoid. Pus very offensive. There was so much bulging of the posterior superior wall that the drum membrane could not be seen at all. Immediate operation advised and done.

Operative Findings.—A perforation of the tip of the mastoid with considerable extravasation of pus. The whole of the mastoid, which was of the pneumatic variety, was filled with pus and granulation tissue, which was under considerable pressure. The whole of the tip of the mastoid had to be removed and the attie was opened. A free paracentesis of the drum membrane. Packed with iodoform gauze. Because of extensive disease of the mastoid and the involvement of the sinus, I feared very much a sinus thrombosis. However, the temperature soon dropped to normal, and never reached 99° after. The ear was free from pus at the second dressing. The case made an uneventful recovery, with hearing unimpaired. This case again illustrates what extensive disease may take place with but a few symptoms. It further illustrates that general practitioners should not deal with such cases. I am thoroughly convinced that there was a bulging of the posterior superior walls in this particular case a week following her original infection.

Case 5. Referred by Dr. J. B. Hanna. Female, 35. Has had an acute otitis for the last five weeks. Has had various kinds of drops and soothing applications for the relief of pain. Has had hot and cold applications to the ear without relief. More or less pain over the whole side of the head for the last two weeks.

Examination.—Temperature 101°. Increased surface temperature of this mastoid. Tenderness of the whole of the mastoid and particularly over the tip. A bulging of the posterior superior wall. A small perforation in front and below. Advised immediate operation because of the duration of the disease with bulging of the posterior superior wall and increase of surface temperature, added to the sensitiveness on pressure. Operation recommended and done on the following day.

Findings.—After a free paracentesis, the operation was done in the usual way. Large pneumatic mastoid. Each individual cell as well as the antrum was filled with edematous membrane. I called this edematous mucous membrane, I do not know a better name for it. As the individual cells were cut across, this mucous membrane or possibly granulation tissue would bulge from the cavity. Pus was not found in the cells, but was found in the antrum. My explanation of this pathological condition is that the inflammation had begun to subside. No doubt all these cavities were primarily infected to produce the condition spoken of. However, I am of the opinion that had the operation not been done she would have had a brain infection. The discharge from her ear had entirely ceased at her first dressing. The posterior wound had healed in four weeks. Hearing impaired because of long duration of discharge.

Case 6. Child 6 years old. Has had pain in her ear off and on for the last week. Considerable tenderness over the mastoid. Temperature 101°. Pulse 120. No increased surface temperature. The pain at night is so intense she cannot sleep. Relieved by hot applications.

Ear Examination.—A bulging of the posterior superior wall which extends into the drum membrane. The drum membrane is very red. A free paracentesis was advised and done, and the same treatment carried out that I have recommended before. The following day the temperature had dropped to normal, there was not so much tenderness over the mastoid. A hot compress and hot tampons were again applied. The patient resting very comfortably during the day and night complaining of no pain whatever. The third or fourth day following the paracentesis a bulging appeared in the posterior superior wall. Temperature 101°. Pulse 120. Did not complain of pain. However I recommended operation. Done the same day. I again incised the drum membrane and did the operation in the usual manner. A pneumatic mastoid. The mucous membrane of each cell was so inflamed that it completely filled the cell. I did not encounter pus until I got into the antrum. The mucous membrane at this place had the same appearance as that of the cells, besides it was bathed in pus. The ear was dry about ten days after the operation. The posterior wound closed in three weeks. Following the operation she continued to have some pain in the mastoid region and some temperature. The only way that I can account for this is that I overlooked an individual cell that went on to the formation of pus, breaking its way through to the operative field, or because of the virulence of the infection which was improved by the application of a bi-chloride dressing. Otherwise this case made an uneventful recovery.

Case 7. Referred by Dr. H. C. Moffit: Infectious sinus thrombosis from delayed operative interference, in a case of mastoditis of four months' duration. Reported in full in "California State Journal of Medicine." This case illustrates very beautifully the cerebral complications that are sure to follow if not operated. Made complete recovery.

Case 8. Clinical case: Fracture of base of skull followed by acute purulent otitis, mastoiditis, infectious sinus thrombosis. Four weeks since accident. Recovery. This case again illustrates very beautifully the importance of early operative interference, especially when associated with fracture of the base. Reported in full in the "California State Journal of Medicine."

In conclusion I wish to say that the bulging of the posterior superior wall of the meatus is almost a constant factor with pus retention. That more significance should be directed to this purulent condition. That the absence of fever and pain must not be taken into consideration when you have a bulging of the posterior superior wall. That the presence of fever and pain without bulging of the posterior superior wall must be indications sufficient to warrant operation especially when coming on late.

In a series of twenty-seven cases, hearing was impaired in two due to delayed operation. Hearing unimpaired in the balance. All the cases are absolutely well.

The longest duration for closure of the posterior wound was six weeks in two cases. The shortest ten days. The longest duration for pus from the meatus was four weeks in one case, the shortest my first dressing. The average about six or ten days.

All the cerebral complications developed from delayed operative interference.

If you follow my suggestions you may do an occasional unnecessary operation, but I am confident that your patient will not die of cerebral complications.

I do not mind repeating a statement I made at the Ear Section of the American Medical Association, June, 1907. Acute cases of mastoiditis should never terminate fatally, and I am confident they will not if they are operated soon enough.

DISCUSSION OF THE SYMPOSIUM ON OTITIS MEDIA.

Dr. A. C. Rogers, Los Angeles: So far the subject has been gone into very extensively and very satisfactorily. The gentlemen who have read the papers have passed over one point and another in the most satisfactory manner, and I feel entirely incompetent to add anything except this one thing: I believe we should urge upon our brother practitioners, the men who are doing the practice of medicine in their respective localities, that they should form and follow this invariable rule, that every sick child presenting the common symptoms of fever, and pain, or restlessness, or unconsciousness, should have a careful examination of the external ear.

Dr. E. W. Fleming, Los Angeles: The time allotted for discussion is so short that it would be impossible to cover all the points brought up by Dr. Hastings in his most comprehensive and interesting paper. I am on the program to discuss his paper and therefore mention it particularly. I shall touch only briefly upon a few of the points dwelt upon by the essayists. If all cases of mastoiditis following acute otitis media coming to us for an opinion corresponded to that class in which all the classical inflammatory manifestations, both at the fundus of the ear and in the mastoid region, are present, the duty of the surgeon is plain. Recovery, however, even in this type of cases has occurred in my practice in patients who refused operative interference of any kind. Two types of mastoiditis frequently met with are, first, those cases where the manifestations of inflammation in the mastoid bone are especially pronounced—while the drum membrane and deeper canal appearances are at no time well defined—and

second, cases where the very opposite conditions prevail. Another and quite the most difficult class of cases are those which show little or no adequate local or systemic manifestations to help us to determine the true condition of the patient. These cases where the indications for operative interference are not well defined must be studied from day to day in their minutest detail. Here the keen appreciation of the personal judgment of the surgeon that comes from an adequate clinical experience is, to my mind, the most important factor in determining whether or not the patient should be operated upon. A laboratory diagnosis may be very helpful. It should be made by one whose technic is free from error, else it may be worse than useless. It is exceedingly important to constantly keep in mind that intracranial complications of purulent otitis media may occur other than by way of the mastoid cells. As, for instance, the tegmen tympani—or it may be by way of the circulation. As good drainage is essential to the prompt cure of an acute otitis media, an early mastoid operation, even in doubtful cases, has the advantage of checking further destruction by the disease of the middle ear structures by establishing posterior drainage, and at the same time permits the surgeon to make sure of his ground from the viewpoint of the mastoid cavity. Having had several disagreeable experiences in cases of brain, meningeal and sinus involvement following acute suppuration of the middle ear with associated mastoiditis, without mastoid symptoms, I am strongly disposed to agree with Whiting, Jackson and others, who contend for early, and, it may be, unnecessary operation, rather than assume the responsibility of a possible development of a dangerous complication as the result of an over conservative attitude.

Dr. Edw. Gray, Eldridge: The first case of mastoid disease which I ever saw was in the year 1875. At that time you are aware the state of medical education was quite different from what it now is; and it was because of the occurrence and the presenting before me of a case of fatal mastoid disease in the person of a girl 16 years of age, taken into the hospital, and the evident helplessness of the hospital force in fighting it that led me to go to the city of Vienna and there study diseases of the ear, nose and throat. I will not worry you with the history of that case, suffice it to say that it was a case of neglected ear-disease following measles in childhood. The otorrhea had been running on for a period of perhaps ten years, and I at the time was senior assistant in the Presbyterian Hospital in the city of New York, and I was sent down to the tenement district to examine this case to see if it were a proper one to enter the hospital, because evidently the suspicion of the authorities was that it might be a case of cerebro-spinal meningitis. The symptoms were cerebral. The girl was taken into the hospital and after a variable history over something like ten days finally died with symptoms that resembled apoplexy more than anything else. A post mortem was secured. The tegmen tympani was thoroughly disorganized, blackened, and the orifice through which the pus, etc., had made its way was clearly defined, and the portion of the cerebral meninges which had thereby been irritated and formed an abscess of the brain was clearly demarcated.

After returning from Vienna and coming back to this, my native, state and entering into practice it was a long time before I encountered another case. I refer to this because it was a singular case. There has not been a single reference in all that has been said this afternoon to the conditions that case presented. It was evidently a case of acute purulent otitis media, with mastoid complications. At the time I was called it was only because the patient had been under the care of another practitioner who was, by the way, a medical officer in the United States army, and I am sorry to say he was one of the very infrequent class in the army who sometimes went off on a spree, and because he was incapacitated I was called. I found the patient was treated simply for neuralgia for something like three weeks, and yet it was a case of acute mastoiditis, which any one who knew the symptoms could recognize. I immediately explained to the family the necessity of operation, and how much more difficult that was in those days. Of course they wanted consultation. The consultant was friendly and told them they were losing valuable time. He told me, "I don't know anything about it. If you do, go ahead." I went ahead and removed some fifty minims or more of pus and the patient recovered with no untoward symptoms so far as hearing was concerned, but with the complication of an abscess burrowing down the sterno mastoid. The patient finally recovered and is alive to-day. He has said to me that that was the worst thing I ever did for him, for he ought to have been allowed to die, and the community thought so, too.

Chairman Roberts: Where did you open, doctor, the mastoid?

Dr. Gray: Yes, sir, the mastoid, with a drill.

Dr. Geo. A. Hare, Fresno: I have been exceedingly interested in the papers presented to us, and was particularly impressed by some of the thoughts in the last paper read. I want to compliment the doctor in presenting his paper in so succinct a manner and on the force and logic with which he summed up his thoughts. I wish to criticize in the most friendly manner. I am not in this line of work, but in my earlier years I was in throat and ear work. I speak from the standpoint of the general practitioner to-day, and it is therefore with some diffidence that I make the suggestion as to the use of cold. I hardly agree with the essayist as to the use of cold, that it masks the symptoms and causes paralysis, or at least a measure of benumbing of the tissues to such a degree as to often give us untoward results, but I believe that will invariably be obviated if the cold is used as it ought to be used, and I wish to make that point with emphasis. If a cold application is placed upon any inflamed surface we control that inflammation, I believe, better than by any other temporizing method. But if it is permitted to remain long enough will cause a vaso-motor paralysis and will increase the very thing we are trying to decrease. I believe it does effect all the deeper tissues of the body. The blood supply is controlled by conditions affecting the cutaneous surface. You place heat upon the surface and the blood supply to the deeper tissues will be increased, and if you apply cold the blood supply to the deeper tissues will be diminished. But if that cold is maintained the blood vessels are paralyzed and you get a hyperemia that you do not want. I invariably follow the rule either in an appendicitis or a mastoid complication, where beginning inflammation occurs, if I can have access to cold, keep it on forty or fifty minutes and then apply a hot compress for five minutes, renew the cold again, and thus maintain the sensibility of the skin permanently, and I can do more by cold than by any other means I have ever seen in the control of inflammation. I have no hesitation in advocating it very strenuously, and commend it to you, for I believe we often neglect the most conservative method of treatment at our disposal because we get these untoward results which can be obviated.

Dr. F. L. Rogers, Long Beach: I wish to refer briefly to a phase of the etiology of acute inflammation of the middle ear, which has been touched upon by two or three of the papers read, i. e., that adenoid growths are a frequent, perhaps the most frequent cause either directly or indirectly, of acute otitis media in children, and to emphasize what has

been said relative to their early removal. When I was a student the teaching was, that the operation should be postponed until the child had reached seven or eight years of age, in order to give nature a chance to "absorb the growths." But when I had a little experience of my own, I found as others have, that once the third tonsil is hypertrophied in a vast majority of cases, it remains so, and the sooner the obstruction is removed the better for the child. And the age of the child cuts little or no figure. These children are nearly all anemic and badly nourished and if they live to reach school age are found markedly below par in mental and physical development. They are mouth breathers, and from disuse the nasal passages and dental arch fail to expand normally. This leaves the child more or less permanently crippled and deformed and unless the post-nasal obstructions are removed early in the developmental period of his life these deformities remain a permanent handicap. The adenoid operation, if properly performed, is a bloody and shocking procedure, and in my opinion is rarely done with thoroughness unless under a general anesthetic. I regard the operation without general anesthesia both dangerous and barbarous, and rarely thoroughly executed when undertaken in that way. To do the operation well, considerable skill and great care is necessary, and a digital examination of the field of operation should always be made after the curettement. Particularly would I call attention to the difficulty of reaching Rosenmueller's fossae and the field around about the orifices of the eustachian tubes and the lateral walls of the pharynx, with the Gottstein curette. For this supplemental work I have found a good instrument in the curette devised by Byington of Battle Creek, and made by F. A. Hardy & Co., with a long slender loop blade and a double cutting edge, placed horizontally. I never consider an operation complete until I use my long straight-handled curette through the nose, my finger at the same time in the naso-pharynx as a guide to remove any small excrescences on the lateral walls of the posterior nares, or small vegetations on the turbinates. In fifteen years I do not remember to have had to operate the second time on a case where these precautions were all taken and a general anesthetic was used.

Dr. Joseph Jackson, Pasadena: I want to call attention again to the point of using heat and cold for stopping inflammation. Isn't the reason for using either to stop a bacterial growth, and cause a temperature of such a degree that the bacteria can not develop? Isn't it more that than a greater or less blood supply to the part? I like cold in the beginning of inflammatory processes, and use it for that reason, that the streptococci or staphylococci, or whatever the organism present may be, cannot develop except at a certain temperature. Then again, if the vessels be paralyzed, isn't paralysis equally favored by heat and cold? Then again, is paralysis of the vessels objectionable? Do we not wish to cause or favor a hyperemia? Doesn't the hyperemia help to remove the lesion produced by bacterial action? Isn't the checking of the growth of bacteria the main indication for using either heat or cold?

Dr. K. Pischel, San Francisco: It has been pointed out before that the family physician should examine or have examined a child's ear in every case of fever where we can not find any other explanation. In this connection I wish to call attention to a symptom which Sanford Blum called attention to last year. It has been mentioned in some of the text-books, but has not been brought generally to our attention. It is the sensitiveness to pressure behind the jaw. When examining a baby you can easily try it. While I perfectly agree that we should make microscopic examinations of the discharge from the ear, I do not think we are far enough advanced to decide about the seriousness of the infection. We find frequently that streptococcus infection leads to serious troubles, while a pure streptococcus infection may after paracentesis pass off after a day or so.

As to the closing sentence of the last essayist, "Few cases of acute mastoditis should have the operation fail, and I am confident they will not if operated on early enough," I take exception to that statement. I think there are acute infections which go so quickly that we can not possibly make the diagnosis quick enough—that a general infection takes place too quickly. Secondly, "In mastoid work a competent person can only do good, and never do harm," which was stated at the reading of the same paper in San Francisco the other day. I will have to take exception to that, too. We can do harm. Even the competent surgeon can do harm. In mastoid work we have to resort to general anesthesia, and there is no doubt in my mind that we have many deaths after a general anesthesia which formerly we did not account for. The last few years a number of cases have been reported of death three, four or five days after general anesthesia. That can happen in mastoid as well as in abdominal work, and I am sorry to say I have had some experience about it.

A Member: I should like to ask whether with chloroform or with ether?

Dr. Pischel: According to a paper read by a Chicagoan, Dr. Bevan, if I am not mistaken, at the Portland meeting, chloroform is the more dangerous, but ether can cause acute affections of the kidney three or four days afterward.

A Member: I am asking whether your experience was with chloroform or with ether?

Dr. Pischel: Happily, I have had but one case with chloroform, but according to Bevan with ether such unfortunate effects can happen.

Dr. H. G. Thomas, Oakland: I think, going back to the root of the matter, too much stress can not be laid on the diagnosis of adenoids in infants. This is not done often enough. The specialists do not see them frequently. The general practitioners do not look for them. I have been taught by the specialists to do it. We can only agree and lay emphasis on the fact that every case of snuffles we see is dead sure adenoids, in infants. Dr. Stephens has brought out a lack of air as the cause. If you will go back to your obstetric days you will remember the stuffy room, with the lack of fresh air and the swaddling of the child in heavy wraps, and completely covering it from the air, and the development of adenoids after birth is perhaps due to lack of air rather than to the food.

Coming down to the last paper, it is good to have something to kick at. We all take issue with Dr. Welty in the matter of cold. My friends the specialists, as well as the general practitioners, will all agree that in acute otitis media beginning with the earache thousands of cases have been aborted by cold. My custom is to put on the bag or coil, keep it on thirty minutes and take it off, and put it on again. In that way we apply cold not only to the mastoid but to the points in front and under the ear which control the blood supply to the middle ear. In that way I have seen very acute earache controlled in thirty minutes, with no return. I think the heat furnishes a number of cases that Dr. Welty otherwise would not get, and the Leiter coil has saved the specialist many a piece of work.

Dr. A. C. Rogers, Los Angeles: Leave off the cold, simply use the Politzer bag and nine times out of ten your earache will disappear and not return.

Dr. Fred Baker, San Diego: I want to emphasize one or two points. We have had the question of radical operation for adenoids mentioned by Dr. Rogers and I fully concur in what he said, but he speaks of the curettes and their inefficiency. I think it has been the experience of every one who operates that the use of the curette is unsatisfactory if the operation terminates at that point. I thoroughly be-

lieve the best instrument for operation on adenoids is the finger nail. Of course, it must be rendered as aseptic as possible, but I do not believe any operation is satisfactorily done unless you examine with the finger to see what is done, and I do not believe the Gottstein curette or anything else will clean out the cavity so that the adenoid will not return. I am of the opinion—I do not think my experience is wide enough to state it positively—that in the removal of adenoids a second operation is necessary only where adenoids are left after operation. I believe if you go in with the finger nail and clean out the cavity as well as you can you will have few cases of recurrence of the adenoids. In this connection I wish to call attention to a method of procedure I have never seen mentioned or noted before. It is original as far as my own experience is concerned. On one occasion in cleaning the finger nail I pared down the inner surface until I had produced a chisel edge, and I was surprised at the facility with which I could remove the tissue; I am tempted to try the complete operation in this way. I want to protest against the removal of the tonsils and adenoids in the same operation. I have seen it done a number of times and I have done it myself twice. In both of these instances, owing to the fact that the hemorrhage is considerable, and it is impossible to continue the anesthetic, I did an imperfect operation. I believe the removal of the adenoids is the most important and the tonsils can be removed afterward. The operation should be divided and the tonsils removed either before or afterwards. Take plenty of time and use general anesthesia every time, if it is possible, and you will generally prevent all recurrences. Just a word more. I think Dr. Welty, by an inadvertence, made a mistake in his statement, or rather, he was not full enough. I am a believer in both cold and hot applications, and as Dr. Hare said, alternation is a most excellent procedure. I alternate them, but believe both are beneficial. But the point I wish to make is that in putting on the application hot he does not say anything about keeping it hot, except to mention that by the external application of something the dressing can be kept hot. I think if we put on a wet dressing it is imperative that it should be kept hot. We know that if we macerate the tissues with a warm application we have applied a poultice, and we know that bacteria grow under a poultice more than under any other condition, and if we are going to put a poultice on we had better not. I was told in the beginning that we should not poultice an eye or an ear, and I think probably it was an inadvertence on the part of Dr. Welty. I believe such treatment would result in damage.

Dr. E. C. Sewall, San Francisco: In speaking of the removal of tonsils and adenoids as a prophylactic measure in ear trouble, I wish to say a word in regard to using an anesthetic especially in removing the tonsils. It is my point of view that when we remove the tonsils we must remove them in their entirety; that is to say, the tonsil must first be entirely cleared from the pillars anteriorly and posteriorly, and then from the superior constrictor, and removed, preferably, by the cold snare. It has become the custom of late years in the removal of tonsils, especially in children, to send them to the hospital, administer a general anesthetic and remove the tonsils, and at the same time, I believe, the adenoids. I wish to insist that the tonsils must be removed in their entirety, but I believe it is possible in the great majority of cases to remove the tonsils, in children even, under the use of a local anesthetic. I began some months ago because of the great objection to using a general anesthetic, even ether, in children who have throats filled up with tonsils and adenoids. We have all had the experience where children have become cyanotic, and have come very near death, we might say, from the use of a general anesthetic. For that reason I began first injecting cocaine directly by the use of a hypodermic syringe into the tonsils. After using that a short time I changed it to eucaine, and have since used a solution of half per cent strength, and one per cent in removing one tonsil. Since using this I have removed them in sixty cases in the last five months, the ages running from five years to adults. In some five-year-old children only one tonsil was removed at a time, and they returned after a few weeks to have the other one removed, which shows that the pain was not great.

Dr. Wright, Altadena: I wish to report one case that bears on the point as to whether a mastoid case operated soon enough will ever die. I know of one case operated within thirty-six hours in which a thrombus of the jugular vein was found, followed by a leptomengitis in six hours after the first symptoms came on.

A Member: You didn't operate early enough.

Dr. Wright: Well, how early should we operate? That is what I want to find out.

A Member: Before the thrombus forms. (Laughter.)

Dr. F. D. Bullard, Los Angeles: From my personal experience the best way is to pass the eustachian catheter. Having twice had otitis media my colleague, Ellis, inflated the ear and all the symptoms disappeared, and I urge your attention to early inflation.

A Member: Do you apply that to children?

Dr. F. D. Bullard: I don't know that you could apply the catheter, but Politzerization would be possible. Another thing is to urge upon the general practitioners to send their children to the specialist to have their adenoids taken care of. Not long since a physician in Los Angeles sent his child to me for an error in refraction, and I called his attention to the fact that the child had adenoids. He had not recognized it, although he is a competent physician. Now I believe we should go around and have the doctors all in and lined up first.

Dr. Geo. A. Hare, Fresno: I wish simply to ask as to the relative danger of the use of the Politzer bag in acute earache—if that is a routine practice in the treatment of children with earache? I should like to hear from those advocating it.

Dr. William Simpson, San Jose: I would like to say in regard to the use of the Politzer bag that I have been using it for twenty-five years and I have never seen any trouble from it. In many cases I think it is the very first thing to do. But there is just one point I would like to make in that connection, and that is that we are making a tremendous mistake in discussing these questions among ourselves as specialists; that to do good this discussion ought to take place when the general practitioner is present, for I am sure there is not a man in this room but knows that a campaign of education ought to be conducted on this line for the benefit of the general practitioner. The difficulty comes from the fact that they hang on to these cases just as long as possible, and send them to us so late that it is almost impossible for us to do a bit of good. I heard a lot here this morning as to a campaign of education on the milk question, and on various other questions; if there is any question on which a campaign of education should be conducted, it is "that the general practitioner does not know everything about eyes and ears." But until we get to that point you might just as well take your chance, and when they come to you do the best you can.

Chairman Roberts: I will say in reply that this is supposed to be a meeting for the general practitioner and not for the specialists.

Dr. William Simpson: I am glad if some of them heard what I have said.

Dr. R. L. Doig, San Diego: Doctor, the remarks

you have just made make unnecessary much of what I wished to say. Watching the work of specialists for the past ten years, the results have been so impressive, so astonishingly beneficial in many cases, that I am anxious the general practitioner should be educated as to its importance. During the first fifteen years of my practice I was practically ignorant of this work and its results. Two years ago I presented a paper at Riverside from the standpoint of the general practitioner. Very much to my disappointment I read it before a lot of specialists who knew more about it than I. That was not what I wanted to do, and the effect of the paper was lost. Another thing I would urge, and that is the directing of the attention of the dentists to this matter. In that paper I said that one of the best papers I had heard was a dental paper, in my town, on this subject, but I have reason to feel that dentists in general do not appreciate it. Just the other day a little girl, probably fourteen years of age, moved into a house adjoining mine. She is one of those rather pretty girls, spoiled by prominent front teeth. She has a pretty voice and would sing well if she had proper respiration. I called the attention of her mother to these prominent teeth, and she said, "Yes, it is a case where she sucked her thumbs, and the dentist said, as long as she did, he could not do anything for it." I called her attention to the fact that it was because she could not breath through her nose. She said she had never heard of adenoids and the dentist assured her that the trouble all come from the child sucking her thumb.

Dr. F. L. Rogers, Long Beach: Inasmuch as this is a general practitioner's, as well as a specialist's meeting, I feel that the remarks of Dr. Simpson should be commented upon, particularly in reference to the use of the Politzer bag in acute otitis media. I do not believe this section wants to go on record as favoring indiscriminate, or even routine Politzerization for this condition. The doctor stated, whether as a matter of inadvertance or not, that the first thing that should be done in a case of acute otitis media is the use of the Politzer bag.

Dr. William Simpson: I did not say in every case; I said often it was the first thing to be done.

Dr. F. L. Rogers: I can not agree with the statement even with that qualification, for in my opinion, the first thing indicated in acute otitis media is to cleanse, and as far as possible to sterilize the nasopharynx as well as the external auditory canal, with hot saline antiseptic solutions. This in itself depletes the tissues and relieves the tension and may be sufficient to permit the entrance of air by natural means. If this fails then use a Politzer bag early, but with extreme caution. I thoroughly agree with the gentleman who said that the use of the eustachian catheter, even in children, is the most satisfactory way to inflate the middle ear. Only yesterday I used it for a child four and a half years old. A small amount of one per cent cocaine solution was used first and the child made but little complaint, and the results were very satisfactory, both as to pain relief and improvement in hearing.

Dr. William Barclay Stephens, San Francisco: With reference to the use of the Politzer bag, which really comes within the province of my paper, I believe I stated there that I sometimes use it in acute cases which are simply the result of acute congestion of the throat and without infection, having previously cleansed the throat. I should like to say in conjunction with my own paper that I do not want to leave a wrong impression as to employing only a simple puncture of the membrana tympani. It is only in those cases of acute congestion. In other cases where there is pus, or sero-pus, or where we suspect there is any infection, I believe in thorough incision of the membrana about the posterior inferior third. Then where the attic is involved and we suspect there is involvement of the antrum I use a Graeffe knife, extending up into the attic wall, and if tender over the mastoid I cut out through the canal, making a modified Weil's incision.

Dr. Cullen F. Welty, San Francisco: Dr. Stevens recommended a puncture of the drum membrane which I wish to criticize very much. The only condition in which a puncture should be done is in myringitis. Otherwise always a free incision of the drum membrane and not extending into the canal, because you open a field that may produce perichrondritis; I know of such a case. I believe that all cases of acute purulent otitis media not dependent upon infectious diseases should have their tonsils and adenoids, particularly their adenoids, removed at once, as they are the predisposing factor in so many cases, and if not removed the ear may continue to discharge indefinitely, or the hearing be more or less seriously impaired. No doubt all of you have seen such cases. If there ever was an indication for removal of the tonsils and adenoids, this should be considered one of greatest importance. Over treatment of the naso-pharynx in acute infectious diseases I believe is responsible for many cases of purulent otitis media. I should not recommend more than two or three treatments per day, and of the mildest form that can be applied. I sometimes doubt the advisability of any interference. When the tonsils are seriously infected it may do some good. Politzerization in acute otitis media is the thing par excellence. Politzerization in acute purulent otitis media does not do any good, nor does it any harm. Many ear men have contended that the pus was blown into the mastoid cells. If you only recall pathology you will remember that the tympanic cavity and mastoid cells are infected primarily in this disease. Some recommend Politzerization two or three days following a free incision of the drum membrane, in order to forcibly blow some of the pus from the tube and tympanic cavity. In this condition it is also stated that a mastoiditis may be produced, which is entirely wrong, as I have stated before. I do not believe Politzerization does much good at all, because the tube enters about the center of the cavity, and that pus below the center will remain. The question of a bandage in acute otitis media has not been spoken of; I wish to recommend it, and insist that you are not doing your best when you allow your patients to go without it. As a physician or surgeon, would you allow your patient to go about with an inflamed part without protecting the same? And I say a piece of cotton put into the ear is not sufficient protection. The only criticism I have to make on Dr. Hastings' paper is that it is not sufficiently complete. The question of heat and cold in acute purulent otitis media has been discussed for the last ten years by ear surgeons, and when I say that most of them have discarded the cold in preference to the heat you must accept it as such. I remember very well a case of acute otitis media that terminated fatally, was treated by the Leiter coil with ice water. This made such an impression on me that I will never forget it. The symptoms were so masked by the use of the coil that another case was sacrificed to science. I believe in hot applications because they have served me well. As I have said in my paper, after a free incision of the drum membrane, put on a hot solution, and if your patient is not improved in twenty-four hours the most conservative procedure is that of operation. In connection with the use of heat, Dr. Thomas says I will increase my cases for operation. This has not been so, as I have had but two cases of acute purulent otitis media that I have seen from the acute condition to increase in severity and demand operation. I most heartily recommend hot applications, and will say, if you use it in ten cases as I have advised, I am confident you will never use cold again. Dr.

Pischel takes exception to my statement, "that a competent man can only do good in mastoid surgery." I will answer this by saying that I have never seen the facial nerve cut. I have seen the dura uncovered and punctured, if you please, the sinus uncovered and accidently opened, but I have never seen a serious complication nor a complication of any kind, as the direct result of the operation. I have seen acute cases of mastoiditis die because they have not been operated upon early enough, but from no other reason. The deaths that come from anesthesia have nothing to do with the operation at all. That is entirely foreign to the subject. In a two years' service in the Politzer Clinic, there were about forty-five deaths. The lesions were always found to be in the brain or its membranes and from delayed operation in either the acute or the chronic condition. One gentleman spoke of a fatal case on the third day from cerebral complications. This again illustrates the very points that I have tried to emphasize. I am confident that had this case been examined carefully, and conditions looked for that I have spoken of, the case would not have been sacrificed.

PLAGUE.

Being a translation of the Fourth Chapter of "La Pathologie Exotique," by Professor A. Le Dantec of the Faculty of Medicine, Bordeaux.

Translated for the State Journal by Dr. W. C. RUCKER, P. A. Surgeon, U. S. P. H. and M. H. S.

(Note.—In sending the manuscript, Dr. Rucker writes as follows: "I am sending you herewith a translation of the fourth chapter of Le Dantec's 'La Pathologie Exotique.' This is not a finished production inasmuch as it is the product of the few moments of recreation which have been allowed me in the past few months. It contains so much of interest, especially to the physicians of California, and is in such agreeable style that it seems to merit publication in your journal." It is indeed a most valuable contribution to the subject of plague and therefore no apology is made for its length; it should be carefully studied by every physician in this state. Ed.)

Synonyms: Bubonic plague; peste a bubons; typhus of the Orient; levantine fever; pest; in Chinese Yang-tse or lao-chow-ping (disease of rats).

From the bacteriological viewpoint, plague should be considered as a true septicaemia caused by a specific cocco-bacillus. From the clinical viewpoint, it is a febrile disease characterized by a most pronounced typhoid state and by the development of buboes, carbuncles and petechiae.

History.

1. The Plagues of the Ancients. The ancients called all the diseases, which affected them in epidemics and caused a considerable mortality, plague. The disease, which raged at Athens in 430 and which is known in history by the name of "the plague of Athens," was not true plague. It is the same as the plague of Antonin, which ravaged Europe and Asia at the time of Marcus Aurelius (166 B. C.), and of the plague of Carthage which attacked Egypt, the coast of Africa, Italy and Greece from 255 to 265 and which has been so well described by St. Cyprien. These three epidemics or plagues called by the ancient word seem to have all been the same affection, which, according to Littré, seems to have disappeared from the surface of the globe as its symptoms are not like any other disease which exists to-day.

2. The True Plague of the Ancients. The true plague seems to have been known in Egypt before the Christian era. A manuscript of Oribase, dating from 200 to 300 years before Christ, speaks of a disease characterized by a violent fever, pains, and an eruption of large, hard buboes.

3. The Plague from the Christian Era to Our Days. The first epidemic of plague which has been registered in an authentic manner is known under the name, "Plague of Justinian" (542). It has been described by Evagrius and Procape. Starting at Péluse, on the delta of the Nile, one flank of it penetrated Persia while the other ravaged all the seaboard of the Mediterranean.

The greatest epidemic which has been let loose upon humanity is the plague known in history as the black pest. It left China about 1334, and marching from East to West it invaded successively, India, Persia, Russia, Germany, France, Italy, Spain, and finally England and Norway (1347-1351). This epidemic carried off twenty-five millions of the inhabitants of Europe, which at that time amounted to one hundred and five millions. Pope Clement VI, who made a vast inquiry into the ravages caused by the scourge, fixed the figures of the deaths caused in the entire world at 42,836,486. Also what a profound impression this epidemic left on all the writings of the period. They accused the Jews of having poisoned the wells, using therefor a mixture composed of spider webs, the blood of the buboes and animal poisons. This accusation served for a pretext for those terrible persecutions, which cost the lives of thousands of the Israelites. This plague of the fourteenth century was the beginning of the rule of quarantine. The disease perpetuated itself in an endemic state in Europe up to the sixteenth century, when it yielded its place to typhus and typhoid fever, it being thought that it divided itself to create these two diseases (Nully).

During the seventeenth century one notes first, the plague of Marseilles (1720); the plague of Messina (1743), and finally the plague of Moscow (1770).

The plague of Marseilles has remained celebrated in history because of the self-sacrifice which was displayed by Bishop Bulzunce during the time of the epidemic.

At the end of the eighteenth century and the beginning of the nineteenth, Egypt was a permanent focus of plague. From 1783 to 1844, twenty-one epidemics occurred. Of these we are more interested, from a historic point of view, in the epidemic of 1799, which caused the death of two thousand men of the French army in Egypt and Syria at the siege of St. Jean d'Acre (Desgenettes). This succession of epidemics in Egypt made it believed that this country was the original focus of the disease, and the search for the explanation brought forth many theories, the most seductive of which were the theories of the three deltas and the theory of Pariset.

The theory of the three deltas gives for a focus of origin of each pestilential disease, the delta of a great river.

1. The delta of the Nile (plague);
2. The delta of the Ganges (cholera);
3. The delta of the Mississippi (yellow fever).

The theory of Pariset blames the existence of plague in Egypt to the changes which have been produced by the civilization of that country. During all the period of antiquity in which the Egyptians embalmed or salted their cadavers to preserve them, there occurred no epidemic of plague but when these practices were abandoned it raged.

Reckoning from 1850, it seemed that plague was going to be relegated to the domain of history, but in 1878-1879 the epidemic of Wetlianka knocked at the doors of Russia. But this is not what makes one alert, it is by way of the sea that plague penetrates Europe.

The endemic focus of Yunnam awoke sharply in

1894, and began its irradiations to Canton and Hongkong, reaching Bombay in 1896, where it formed a great secondary focus. Beginning from this point the epidemic transported itself a little bit everywhere; Mauritius, 1899; La Réunion, 1899; Tamatooe, 1898-1899; Australia and New Caledonia.

Egypt has been fortunate. Europe, however, was not free from these incursions. Oporto was severely stricken, and London and Marseilles succeeded in smothering the epidemic in the ships and hospitals. In the meantime, quite recently (August, 1903) plague was landed in the suburbs of Marseilles with a cargo of rags for the pasteboard manufactory of St. Barnaby. The rags proved to be from Bombay. Fortunately, the epidemic was quickly checked, for, as we shall see in the following, we actually have at our disposition the efficacious means of protecting ourselves against the terrible scourge.

At present the plague is making an extraordinary expansion lit up by the South African war. The direct relations between India and the Cape of Good Hope multiplied this, and plague debarked many times in South Africa.

The epidemic finally, by crossing the Atlantic, attacked for the first time Argentine, Paraguay, Brazil, etc. One sees by this simple enumeration how much the plague has seized in an offensive movement covering a dozen years.

4. Laboratory Epidemics. It is not only the sides of ships that bear the epidemics of plague, occasionally culture tubes, handled imprudently, spread the plague virus in the laboratory and give rise to local epidemics. It was thus that two laboratory directors were killed, the one in Vienna, the other in Berlin, victims of their imprudence. The laboratory of Nha-Trong has been wrongly accused of having spread the plague in the neighboring villages. Yersin has demonstrated that the disease was imported into the country by the Chinese junks going between Canton and Pakhoi.

Foci of Plague.

The original foci of plague seem to be situated in the massive mountains at the north of India and at the southwest of China, principally at Guhrwal and Yunnam, but the various epidemics of plague which have ravaged the world have left in their wake secondary foci, where the disease breaks out from time to time.

We must consider, then, two kinds of foci; the primary foci and the secondary foci.

1. Primary Foci. (a) Indian Foci. The Indian foci are two in number: first, Guhrwal; second, Pali; separated from one another by seven or eight hundred miles of intervening country which does not present a single case of plague. Guhrwal appears to be the primary focus of plague in India, while Pali seems rather to be a secondary focus. The plague in Pali presents one peculiarity worthy of note; it is frequently accompanied by hemoptysis and inflammation of the lungs. These complications were especially noted in the black plague of the fourteenth century.

The plague which blazed forth in Bombay in 1896 and which is not yet extinguished seems to have been imported by a vessel coming from China loaded with infected merchandise. The epidemic commenced in the quarter Mazagon, near the docks and harbor.

(b) Chinese Focus. The province of Yunnam is a permanent plague focus, which constantly menaces China and Tonkin. China is constantly invaded from Pakhoi and Lieuchu. In 1894, plague was carried from Pakhoi to Canton, where it had 180,000 victims; next at Victoria, capital of Hongkong, it carried off 12,000 Chinese in the native quarter. The disease was preceded by a great mortality of rats and mice. It was during the epidemic of Hongkong that Yersin discovered the pathogenic microbe of plague.

2. Secondary Foci. (a) Tripoli. Plague made its appearance in 1856 in the Arab tribes near Bengazi, and lasted three years. In 1876 a new epidemic occurred at Cyrenaique.

(b) Assyria. Assyria is a mountainous district situated at the south of Hedjaz and Arabia. Its proximity to Mecca causes the fear of the propagation of plague among the Mohammedan pilgrims, who serve as agents for its dissemination to all parts of the world.

(c) Irak-Arabi. This is the ancient Mesopotamia of the Greeks and the Al Djezireh of the Arabs. This province contains two sacred cities, Kerbela and Nedjef, where the tomb of Allah is situated and where the natives take their cadavers for interment. In 1874, after the famine which devastated Persia, there were 12,202 cadavers transported from Persia to Mesopotamia (Reclus). According to Tholasan, Mesopotamia always presents certain sporadic cases of plague regardless of an epidemic. It was from this focus that plague invaded Persia in 1877, next Rescht and finally Astrakhan and Wetlianka (the plague of Wetlianka, 1878-1879). Europe was preserved from the scourge owing to the energetic measures taken by Count Louis Melikoff, who surrounded the stricken localities by a triple sanitary cordon and burned the effects and the houses of the infected. Recently, in 1898, plague appeared at Anzab (Turkish Russia). The sanitary measures taken by the Russian government were again successful in stamping out the scourge.

(d) Uganda. This is a province of English East Africa, situated below the equator, between Lake Albert and Lake Victoria. This focus has been described recently by Koch, who sent a German physician, Zupitza, who confirmed by his microscopic researches the diagnosis made by the missionaries of Uganda. When they actually connect Lake Victoria with Mombasa on the Indian ocean as a line of travel as the English sought a communication between Uganda and the Nile in their last campaign against the Dervishes, this new African focus of plague should be considered a danger to Europe.

3. Bacteriology of Human Plague. (1) Priority of the Discovery of the Plague Bacillus. It is generally believed in France and Europe the specific microbe of plague was discovered simultaneously by Kitasato and Yersin during the epidemic of Hongkong in 1894. The communication of Kitasato was made on July 7, 1894, while that of Yersin was made on the 30th of July of the same year. It seems logical to conclude that the honor of the discovery belongs by right to the Japanese scientist. That is not the case, however, for the two authors have described a different microbe, and it is to-day proven that the bacillus of Yersin is truly the specific microbe.

If the truth has taken so many years to come to light, it is because it was thought for a long time that the two authors had studied the same microbe and that which contributed much to the continuation of the error in medical opinion is the fact that in the extreme Occident we possessed only the cultures of the bacillus of Yersin, while in the extreme Orient the Japanese scientists worked with cultures of the bacillus of Kitasato. The light has little by little cleared up this point in the bacteriological history of plague, thus resulting in the publication of a work, in the "Archives of Naval Medicine," by a physician in the Japanese navy, Dr. Tatsusbaro Yabe. We render homage to the scientific honesty of our Japanese colleague, who acknowledges with great sincerity the error of his scientific compatriot.

Kitasato has determined from the underlying principle of many diseases that when there is a polymicrobic local infection the general circulation is

not invaded by the specific microbe. Kitasato chose the blood for isolating the specific microbe, thinking that since the pus of the bubocs was polymicrobic the blood only contained the microbe in pure culture. But what is true of one disease is not always true of another, and it was found that the microbe isolated from the blood of plague patients by Kitasato is not the true specific organism but really a microbe of secondary infection.

Yersin took as a point of departure for his researches an altogether different principle. The characteristic lesion of plague being the bubo, it is in the bubo that one should find the specific microbe. He isolated therefrom the true micro-organism of plague.

To make it easier to realize the error into which Kitasato has fallen, and to give justice to the view of Yersin, let us take as an example a well-known microbic disease, diphtheria. In diphtheria the characteristic lesion is the false membrane, and it is there that one finds the microbe of Laeffler, which multiplies locally without generalizing itself, but in certain mortal cases of diphtheria one finds in the blood a secondary microbe, the strepto-coccus. Kitasato addressed himself to the blood for isolating the specific organism and recovered a secondary organism. It is well to make known these scientific errors in order to avoid their repetition.

The two organisms offer characteristics so totally different that their differentiation does not offer the slightest difficulty. Here are some of the characters, which enable one to distinguish between them at first glance:

Bacillus of Yersin.

1. Immobile;
2. Does not take Gram's;
3. Does not take milk;
4. Does not cloud bouillon and forms clumps on the sides of the tube.

Bacillus of Kitasato.

1. Mobile;
2. Takes Gram's;
3. Coagulates milk;
4. Clouds boullion.

In the plague of the extreme Orient the bacillus of Yersin and that of Kitasato live side by side, and as noted by Aayama the bacillus of Yersin predominates in the glands while that of Kitasato predominates in the blood. It is not the same in the plague of other regions. Thus, in India, the plague is pure—that is to say, without microbic association. We have ascertained the same purity of the plague at Reunion in a number of smears which our comrade. Dr. Vassal, has obligingly furnished us with (pus from the glands, blood, kidneys, etc.).

It remains to determine the exact nature of the microbe of Kitasato. Is it a streptococcus as according to the view of Aayama? Is it a variety of the pneumococcus as is thought by Tatsusaburo? Is it a variation of the bacillus studied only by Kitasato? Everyone with good reason knows that it cannot be said that the secondary infection is always caused by the same organism. On the contrary, the specific infection is always the same; it is due to a bacillus, which has been apparently without contest by Dr. Yersin.

(2) Isolation of the B. Pestis from Human Pathological Products. For the study of the morphology, the staining and the culture of the pest bacillus, also its action on various animals, it is necessary first to procure a pure culture of the bacillus of Yersin. In man one recovers the plague bacillus:

(a) From the gland in the bubonic form;
(b) From the sputum in the pneumonic form;
(c) From the blood in the septicemic form.

From the Gland. One withdraws by means of a Provatz syringe a little of the serum or pus from the parenchyma of the gland, or one may make a little puncture with a bistoury and draw out the glandular serum with a Pasteur pipette. One spreads this serum upon the surface of a tube or plate of agar, and leaves the tube or plate at room temperature of from 15° to 18° Centigrade. The colonies upon agar are white and small. Their center becomes opaque and yellowish. One assures himself that these are plague colonies by the negative coloration by Gram's method, by the culture on bouillon and by inoculation into guinea pigs from which in a moment we determine the peculiarities. One has thus a pure culture of the bacillus of Yersin. It is wise to isolate first of all on agar and not directly into the bouillon, for the gland does not always contain the plague bacillus in a pure state. When suppuration has been well established it contains many staphylococci and few pest bacilli.

In the Sputum.—It is especially in the pneumonic form that one should address himself to the sputum to isolate the pest bacillus. One chooses if possible a sanguinolent sputum and subjects it to the same manipulations as with the serum or the pus from the buboes. It contains the plague bacilli in great abundance.

In the Blood.—The bacillus of plague is absent from the blood at the beginning of the disease and it remains absent except in rare cases of great severity but if the disease takes on a grave aspect it is indicated by the bacilli making their appearance in the systemic circulation. In all fatal cases one finds the plague bacilli in the blood twenty-four hours before death. We have here an analogy to the conditions found in man in malignant pustule. The bacillus of anthrax is first localized in the vicinity of the pustule and finally invades the circulatory system and produces death.

Calvert in Manila has sought to discover at what moment one finds the bacillus of plague in the blood in fatal cases. In thirty-two cases he found the bacillus of plague in the blood:

In one case, 120 hours before death.
In two cases, 96 hours before death.
In five cases, 72 hours before death.
In seven cases, 48 hours before death.
In the thirty-two cases, 24 hours before death.

Calvert has been able to follow step by step the evolution of the septicemia by examining smears from the blood; at the time of the beginning one never sees more than a few bacilli, sometimes but a single one, twenty-four hours later their number is increased very considerably and the blood becomes transformed into a veritable "purée of microbes" at a more advanced stage of the disease (Besredka).

The presence of the b. pestis in the blood does not always indicate a fatal prognosis. Calvert claims to have seen the plague bacillus in the blood of four persons who recovered. In one of the cases the microbe remained in the blood for forty-eight hours.

At the beginning of a case of plague during which time the bacilli are very rare in the blood, we advise the employment of the procedure so sensible which is to-day utilized in searching for the bacillus of Eberth in the blood of typhoids. One takes 1 c. c. of blood by puncturing a vein by means of a Pravatz syringe and one plants it in 500 c. c. of peptonized bouillon. By employing so great a quantity of blood there are greater chances of discovering the pest bacilli than by employing a single drop of the same fluid. Bouillon should contain flocculi and not be clouded, if the bacilli of plague are discovered in a pure culture in the blood.

Now that we have learned how to obtain a pure culture of the bacillus of Yersin, let us pass in review the various characteristics of this microbe.

Marphology of the Microbe of Plague.

The microbe of plague is a short, squatty bacillus, especially when it is found in the buboes, and a little longer when found in the blood. It stains easily with all the aniline dyes but does not take Gram's stain. The two extremities of the bacilli stain strongly and leave between them a central space which is more clear. It is therefore a spindle shaped microbe. Sometimes the bacilli seem to be surrounded by a capsule.

The microbes growing on a culture of gelatin have the aspect of short little sticks, especially when grown from the buboes, but in the middle of these short rods, one sees the round forms like cocci and the elongated forms which have sometimes given the name cocco-bacillus to the microbe of plague.

When grown on liquid media, the microbe forms itself in little chains like a strepto-bacillus.

The bacillus of plague is stained with all of the aniline colors but it does not take Gram's. This characteristic is important to remember, since by this alone it is possible to differentiate this organism from the ordinary microbes of suppuration, staphylococci, streptococci, and pneumococci, all of which take Gram's. Also we advise the treating of all smears (pus, sputum, etc) with a double staining, Gram's eosin or dilute fuchsin.

For smears from the organs one should employ counter staining but in the inverse order, that is to say, staining first the field with eosin, and afterward, the microbes with methylin blue or violet.

A particular characteristic of the pest bacilli is their cultivation at laboratory temperature, that is to say, at 18° or 20°, rather than the temperature of the incubator.

The organism of plague may be grown upon all the media. Upon gelatin, the colonies are at first white and transparent, afterward their center becomes opaque and yellowish, and when one examines them, appear slightly swollen. The diameter of the colony always remains very small.

The organism of pest grows in bouillon or on water of peptone, 2 to 100. The growth upon these two media is similar to that of the streptococcus, i. e., floculi are formed upon the sides of the tube and does not cloud the bouillon.

The bacillus of plague grows in a characteristic fashion when cultivated after the method of Haffkine. This method consists in placing upon the surface of the bouillon after it has been sterilized, a little cocoanut oil or butter. After the culture has developed, one sees upon the inferior surface of the fatty droplets, flakes and stalactites. Care must be taken not to shake the tube lest one precipitate the flakes held in suspension.

The pest bacillus grows very slightly or not at all upon potatoes at the temperature of the incubator but at the temperature of the laboratory, 15° or 20°, it forms after four or five days a slight coating in the track of the culture. A second passage gives a pearly culture. (Lignieres.)

The bacillus of plague is a very fragile microbe. An exposition of a few moments to 58° is sufficient to destroy it. Sunlight acts in the same manner, but it requires an exposition of four hours to light irradiations to kill a culture. When the microbe is in an albuminous media (sputum, pus, etc.) it is thus protected and its resistance is much greater. Dessication kills it quickly if it is not in a protective albuminous media. All of the antiseptics employed in disinfection kill the pest bacilli in a few moments (corrosive sublimate, carbolic acid, permanganate of potash, chlorinated lime, etc.)

Vitality in Water.

Inghilleri has studied carefully the duration of survival of pest bacilli in distilled water and potable water to determine their adaptability to aquatic media.

(A) Survival in distilled sterilized water. At room temperature plague bacilli live from thirty to sixty days in sterilized water. If one places the flask containing the pest bacilli in the incubator at 35°, the survival is still longer,—60 to 75 days.

(B) Survival in potable water. The survival of pest bacilli is much less in ordinary drinking water than in sterilized distilled water. This is easily explained by the vital competition of the microbic flora of water which rapidly reaches suffocation and causes the pest bacilli to disappear. The latter does not disappear completely for about a month in this environment.

The best method consists of adding to the original culture the proportions growing in water. The bacilli lose their virulence, but when recovered, will revive at the end of five days. (Burnet.) In fact all the researches indicate that pest bacilli are not suited for life in water and resist during a short time but do not multiply.

Vitality in Grains and Rags.

This question is important to solve because grains and rags have been accused of transporting the contagion for great distances. The investigations should be made by spreading pure cultures upon various samples previously sterilized. Corn, peanuts, linseed, farina, rags of wool, cotton and linen which have been soiled with the saliva of virulent plague cases.

According to Hankin, the bacilli do not remain virulent on these substances for more than six days. It is necessary therefore to search for other things to explain the undeniable role played by grains and rags in the transmission of plague.

Vitality in Cadavers and Excrement of Rats.

Maassen, instead of using the method of cultures for revealing the presence of plague microbes in the viscera of rats dead from plague, has adopted the more reasonable method of animal inoculation. To this end he introduced beneath the skin of rats or guinea pigs fragments of the spleen, liver, and buboes which he wished to analyze. Plague was often found in the body of the inoculated animal when the culture of the suspected viscera did not furnish a single colony.

The fragments of pest tissue are then absolutely comparable to fragments of tuberculosis tissue. The growth and stain which is not found sometimes in Koch's bacillus in tuberculous products (white swelling, lupus, etc.) is found upon inoculation of a fragment beneath the skin of a guinea pig, thus demonstrating truly the tuberculous nature of these products.

It has been found that at a temperature of 20° the cadavers of plague rats are very virulent thirty days after death and that at a temperature of 8° the cadavers of plague rats preserve their virulence for at least fifty-three days.

In the excrement of rats fed upon the cadavers of pest rats the bacillus of Yersin preserves its virulence for a short time only; one day upon dried feces, four days when these materials have been preserved from desiccation. To study the vitality of the bacilli in these excrements, Maassen placed the suspected material upon the skin of a freshly shaved animal (Marie).

To sum up, all these experiments demonstrate that merchandise thought to be apt to propagate plague, such as rags and grains, are dangerous not because of their being soiled with the excreta of human plague, but because they serve as a refuge for rats suffering from pest and that upon the death of one, virulent plague bacilli are preserved in the viscera for a considerable time. The bacteriological conclusion is then, that we should make a relentless war upon the rat which is the specific vehicle of the disease.

Animal Inoculations.

Nearly all animals are more or less susceptible to plague, for it has been found that they may take the infection through cutaneous, respiratory and digestive channels.

(A) Cutaneous Route. All laboratory animals (squirrels, rats, guinea pigs and rabbits) are so susceptible to the pest virus that it is sufficient to prick them with a needle charged with the virus to cause in them a fatal case of plague. Here is the method of operation: to inoculate a squirrel or a rat one charges the point of a lancet with a fragment of a culture of pest bacilli or agar, and then pricks the animal in one of the hind feet, in imitation of the maneuver with which one inserts vaccine in the arm of a man, that is to say, by turning the lancet so as to remove the superficial layers of the skin. After a few hours the animal is dull, it limps,—a buboe appears in the glands on the corresponding side, and finally the bacilli are generalized throughout the entire lymphatic and vascular systems. At autopsy the bacilli may be recovered from all the viscera.

To cause plague in the guinea pig, it is sufficient to pluck out a few hairs and to smear the denuded surface with a culture. The animal then presents a local eschar (plague carbuncle) and very quickly succumbs. At autopsy one finds the spleen crowded with little yellowish bacillary foci recalling slightly the appearance of tubercles.

The rabbit should be inoculated by a subcutaneous injection or by spreading the pest virus upon the cutaneous surface denuded and irritated by a razor. In the latter case a sphacelus occurs at the point of inoculation. When one is dealing with a microbe of low virulence it is better to inject beneath the skin. Finally when one is searching for the organism from a fragment of the viscera of the cadavers of plague rats, it is better to introduce all the suspected fragment beneath the skin of a guinea pig or a rat, according to the method of Maassen.

Apes react very quickly to a subcutaneous inoculation as was demonstrated by the Russian Commission at Bombay. It is sufficient to inject beneath the skin of the arm a small quantity of the pest virus to see develop one or two days later edema at the point of inoculation, an axillary buboe, and a fever from 38° to 42° C. Death follows in three to five days. Apes succumb in the same way to an inoculation of minute doses of the virus, as for example, when one simply pricks them with a needle soiled with a pest culture. But then one does not find much localized edema at the point of inoculation, neither are there produced so large glandular tumefactions or buboes. These experiments explain human cases in which one frequently cannot discover any cutaneous lesion in the region tributary to the affected gland.

Passage from animal to animal raises the virulence of the microbe when passed through the same species but not when introduced into other animals. Thus a bacillus of exalted virulence for squirrels affects rabbits but slightly.

(B) Respiratory route. To cause a plague pneumonia it is sufficient to inject a few drops of a virulent culture into the trachea of a receptive animal. The Russian physicians in Bombay have thus produced fatal cases of plague in apes. The pneumonic form of human plague would thus seem to be due to the penetration of the virus into the lungs in the form of atmospheric dust.

Roux and Batzaroff have demonstrated that it is easy to give fatal plague to rats, guinea pigs and rabbits by placing upon their nasal mucous membrane a small number of plague bacilli grown upon a gelatine culture. One is thus better able to transmit plague from animal to animal than by subcutaneous inoculation. Thus intra-nasal inoculation with attenuated virus gives positive results when subcutaneous inoculation with the same virus is not sufficient to produce the death of the animal. At autopsy one finds a lobular or pseudo-lobular broncho-pneumonia with hemorrhagic spots upon the pericardium, peritoneum, stomach and kidneys. The spleen is covered with shining white granulations which are little masses of bacilli. As we shall see later the lesions are exactly the same as those of human plague pneumonia.

(C) Digestive route. It is possible to communicate the disease by the digestive tract by the ingestion of pure cultures of pest bacilli or fragments of the spleen or liver of an animal dead of plague.

According to Simpson, who investigated the matter at Hong Kong in 1901, most domestic animals will contract plague if they are fed upon infected material. The following may be infected by the digestive tract: apes, pigs, calves, buffaloes, sheep, chickens, ducks, geese, turkeys, pigeons and rats. In pigs the incubation is somewhat longer and may exceed one month.

It is very probable that the infection of animals by the digestive tract is not as it appears and that the penetration of the virus is made in reality through the nasal mucous membrane as was proven by the experiments of Simond and Batzaroff. (See later "Propagation of Plague From Rat to Rat.")

Certain birds, for example, vultures, seem to possess a complete immunity against plague. We know that in India the cadavers of the Parsees are exposed in what are called the "Towers of Silence," where the vultures go to devour them. During the plague epidemics which raged in Bombay none of the vultures of the "Towers of Silence" on Malabar Hill were affected by the epidemic.

Bacteriological diagnosis of plague. Thus we find in the presence of a case of suspected human plague that it is of the greatest importance to arrive at the exact diagnosis of the disease with the greatest possible rapidity in order to take measures for immediate preservation. The most common forms of the disease in man are the bubonic, pneumonic and septicemic. It follows that in the presence of one of these clinical forms one works with different fluids; lymph or pus from the buboe, sputum or blood. Each of these pathological products is submitted to the three following tests:

1. Smear, simple stain, Gram.
2. Culture, agar at low temperature..
3. Inoculation in the hind foot (rat or guinea pig.)

The microscopic examination of smears gives at once a good clue which the culture and inoculation transforms into a fact the next day or the day thereafter.

Serum diagnosis. The German Medical Commission sent to Bombay has demonstrated that the serum from the blood of plague patients exercises upon an emulsion of a pure culture o fthe plague bacillus the same agglutinating action that the serum of typhoid and cholera patients has toward the bacillus of Eberth and the comma bacillus.

Pseudo plague bacilli. We must be on guard against a possible error in the bacteriological diagnosis of rat plague. When an epidemic exists among the rats we should not conclude that it is inevitably plague. In fact there exists sometimes a special microbe which resembles morphologically the bacillus of Yersin and occasionally produces death in the rat. Neuman has called attention to the existence of this species. There arrived at Hamburg a ship on board of which was found a dead rat. The autopsy of the animal revealed the anatomical lesions which would make one think of plague—enlarged spleen, hypertrophied glands and foci of pneumonia

in the lungs. The bacteriological analysis isolated an organism resembling closely the bacillus of Yersin but the microbe was not pathogenic to the rat on ingestion. All of the other procedure of inoculation, particularly of the subcutaneous injection, which is so sensitive in the case of true plague, were without result. This was further confirmed by the agglutination test, the organism remaining indifferent on contact with pest serum.

According to Ganthier and Rayband, it is better for the serum identification to use an anti-pest serum which has not been heated. The ordinary therapeutic serum of the Pasteur Institute has been submitted to a certain amount of heat which lessens its agglutinating power.

Anti-Pest Substances.

Haffkine's anti-pest lymph. Haffkine's prophylactic is neither a serum nor a vaccine. It is not a serum because it is not made from the blood of any animal. It is not a vaccine because it does not contain the attenuated and living microbe as does the anti-anthrax vaccine and true vaccine, for example. Therefore the name of lymph suits admirably. Here is how Haffkine prepares his prophylactic lymph: a flask of two litres is filled with a certain amount of bouillon, upon the surface of which is floated some butter. The bouillon is sterilized and then planted with a culture of the bacilli.

The bacilli develop upon the under surface of the butter, sending forth numerous vegetations in the form of stalactites toward the bottom. Five or six times in the course of a month one lightly agitates the flask in such a manner as to precipitate to the bottom the major part of the culture. At the end of a month one satisfies himself that the culture has remained pure, then the liquid is drawn off into test tubes, which are sealed and heated for one hour at 70°. The contents of these tubes are used for inoculations. Before making the inoculations the tube is agitated so as to place in suspension the deposit from the fluid.

Haffkine inoculates from 3-3½cc. in an adult; 2-2½cc in a woman; 1 cc. in a child of more than 10 years; 0.1-0.3cc. in young infants.

Our colleague, Calmette, spoke in the following terms of the method of Haffkine at the Congress of Rotterdam in 1901:

"I have been able to prove from the first," said he, "that the immunity after a single inoculation of 3cc. of a culture in bouillon one month old and heated for one hour at 70°, is not established for seven days. It lasts on the average three weeks in the guinea pig and one month in the ape, testing the resistance for these animals with the same dose of the same virus. In the rat the immunity is more durable after a single injection of 2cc. of a heated culture. In my experiment it has lasted as long as three months. It is therefore possible by Haffkine's method with a single inoculation with cultures killed by sufficient heating, in the great majority of cases to establish in man a sufficient immunity to permit him to pass through an epidemic of plague with immunity.

"Haffkine's vaccination should in consequence render the greatest service in infected countries because of the ease with which it is rapidly grown and by reason of the fact that great quantities of cultures may be produced almost without expense and because the inoculation of heated cultures, even though accompanied with a little pain in certain cases, is not followed by a prolonged incapacity for work."

(To be Continued.)

PUBLICATIONS

A Practical Treatise on Materia Medica and Therapeutics, with Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M. D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital, etc. Sixth edition. F. A. Davis Company, Publishers.

This work now appearing in its sixth edition is too well known to require any lengthy review to point out its merits. The last revision has necessitated many changes in the text, particularly in the direction of nomenclature and strength of preparations. Other notable changes have also been made. Part I of this edition is entirely new and deals with pharmacology in general; included in this portion is a table giving the changes in the strength of preparations and relative dosage, in the present Pharmacopeia and the one which preceded it. Among the new therapeutic agents discussed may be mentioned the Roentgen ray, Finsen light and vibrotherapy. The articles on serumtherapy, animal extracts and hydrotherapy are all suggestive, while that on electricity in medicine is excellent.

A. J. L.

Atlas and Text Book of Human Anatomy. By Dr. Johannes Sobotta, Professor of Anatomy in the University of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy in the University of Michigan. Volume II. The Viscera, including the Heart. 214 illustrations, mostly in color. W. B. Saunders Company, 1906.

This volume is the immediate continuation of the first, and treats of the viscera. For purposes of convenience in dissecting the heart has been included in this book. Topographic anatomy as such has not been specially considered, but often, especially in the original illustration, the method of presentation is necessarily of a topographic character. So well known is Sobotta's Anatomy, particularly in the original, that it seems unnecessary to the reviewer to point out the excellence of the many illustrations produced by the artist, Mr. Hajek. The same methods of reproduction have been employed in this volume as in the first, namely autotype, multicolored lithography, and the three-color process. Explanatory figures and diagrams have been reproduced by simple line-etchings.

A. J. L.

Cosmetic Surgery. The Correction of Featural Imperfections. By Charles C. Miller, M. D. Second Edition Enlarged. 134 pages. Published by the Author, 70 State street, Chicago.

This small volume deals with an aspect of surgery somewhat remote from the interest of surgeons, but sooner or later featural surgery is destined to take its place as a recognized specialty. Left largely in the hands of "beauty specialists" and others of that tribe, advances in this field have been limited from want, in part, of adequate stimulus on the part of the medical profession. Fortunately here and there, a few at first looked upon askance have established reputations founded upon honest effort in the uplifting of practice of this kind. Among these may be mentioned the author of this book. "Four or five years ago ethical practitioners laughed or grew hostile when I mentioned my interest in elective surgery of the face for the correction of featural imperfections which were not actual deformities. Two years ago medical publishers refused to consider a manuscript upon the subject."

The modest and suggestive account of the author's experience in the correction of various deformities such as the excessively large ear, outstanding ears, folds, bags, and wrinkles of the skin about the eyes, hump and tip tilted nose, the inverted and overdeveloped lip, the unusually large mouth, etc., indicates at least some of the possibilities in this field of work. While the various operative procedures described may not meet with unanimous approval, yet the author assures us that they have given excellent results in his hands. Other than this general discussion of the book, no further comments seem necessary beyond emphasis of the admonition of the author "that discretion prevail, and that perfect results alone are satisfactory in this branch of surgery, and that no operation be attempted without careful consideration of the case from every point of view so that no untoward or unexpected complications may arise to discredit operator or specialty."

A. J. L.

A Manual of Pathology. By Guthrie McConnell, M. D., Pathologist to the St. Louis Skin and Cancer Hospital and to St. Luke's Hospital; Bacteriologist to the Missouri State Board of Health; formerly Assistant Pathologist to the Philadelphia City Hospital. W. B. Saunders Company.

For one reared in a world where the importance of morphological detail is subordinated to the biological significance of such expressions of altered function, much in this volume will appear commonplace and inconsequential. Careless of critical discrimination and writing from a viewpoint of a decade back, the author does not glance beyond the gross manifestations of disordered function and altered structure to the fundamental qualities of living substance with which science has mostly dealt within the last few years. Of greater and more permanent value to the student than mere morphology is a general conception of pathology in its relationships to the phenomena of normal physiology.

In placing the book before the public the author naturally disclaims an attempt to replace any of the more voluminous works on pathology; he has sought brevity and has tried at the same time not to sacrifice clearness in the exposition of the material. In so far as its brevity is concerned we pronounce the work a success, but as to the clearness our misgivings might be accounted a prejudice. As might be expected the introductory chapters entitled Pathology, Defects of Development, Disorders of Metabolism, Circulatory Disorders, and Retrogressive Processes contain discussions reduced to the proportion of dictionary definitions. The succeeding one on Inflammation is most disappointing; no reference here to the outlooks so happily emphasized in the monographs of Metschnikoff and Adami. What should have been an illuminating and suggestive discussion is but the time worn tale of yesterday. The section devoted to Neoplasms, while necessarily containing short descriptions which might be considered from the examiner's standpoint adequate, is, so far as making the nature of the various tumors clear, utterly useless. The account in the following chapters of Ehrlich's Lateral Side-Chain Theory is futile. Chapters XII on Specific Micro-organisms and XVII on Bacteriological Methods would have better been omitted. On page 267 it is stated that the "milk-spots so commonly observed on the epicardium are the result of constant pressure"; we grant that this view has often been expressed, but our experience does not accord with this belief. In the part devoted to the pathology of the heart, we find no mention of the role played by lesions of Hiss' bundle; nor do we find the description, in another part of the book, of the production of gall-stones complete.

Without entering into a more detailed criticism of this little volume, it seems clear to the reviewer that the point of view is so restricted that it forecloses any significant gleanings of the relationships of pathology to the allied phases of biological science, nor does it suggest pathology as but one aspect of the diverse manifestations of life and energy, rather than as belonging to a special and exclusively human domain. A. J. L.

A Compend of Surgery for Students and Physicians. By Orville Horwitz, B. S., M. D. Professor of Genito-Urinary Surgery, Jefferson Medical College, etc. Sixth Edition, P. Blakiston's Son & Co. 1907.

That there should be demand enough for a quiz compend of surgery to cause it to be printed, is a sad commentary on our system of medical education. That there could be any commendable feature of such a book is inconceivable, and it is well known and shamelessly admitted that they serve merely as a help to passing examinations. Probably the facts so crudely stated are for the most part correct; but such a compilation is merely to make easier the useless memory-tests of our school and state examinations. From the standpoint of surgery there can be nothing useful or stimulating or even purposeful in the "quiz compend." The fact that this little book is part of the library of so many of our medical students is a significant reflection on the manner in which surgery is taught in our schools. Is it not time the set lecture courses of surgery were discarded, in favor of something alive, that will keep the student awake? Of what interest can it be to a student to hear a professor of surgery tell for an hour what can be read in the books? He is not blind that his pabulum should be so administered. Let the time be taken in demonstrating cases to illustrate the reading; in teaching the man to examine the patient with his own senses. Our students do not intimately handle enough cases. Reading without the specific illustration is deadly, but becomes a live interest when the man has just seen a case in point. If the time wasted on set lectures were consumed in giving well chosen clinics, in quizzing the students at the bedside, in instructing them while they performed operations on animals, the quiz compend would go out of print.

The man who conducts a course in surgery should consider it a personal indictment of his method, that his students read a compend. What a man has seen and done for himself makes him a valuable member of the profession—not what he has committed to memory—and our examinations should be so framed —if we must have them—that they will set a premium on experience even, to students, and not on the conning of textbooks.

Whether or not the "quiz compend" that is under consideration is different in any way from others in its class, I do not know. I should as soon think of reading the dictionary as a quiz compend. C. B.

Text Book of Psychiatry: A Psychological Study of Insanity for Practitioners and Students. By Dr. E. Mendel, ao Professor in the University of Berlin. Authorized translation edited and enlarged by William C. Krauss, M. D., Buffalo, N. Y. President Board of Managers, Buffalo State Hospital for the Insane; Medical Superintendent Providence Retreat for the Insane. Neurologist to Buffalo General, Erie County, German, Emergency Hospitals, etc. Member of the American Neurological Association. Philadelphia, F. A. Davis & Co., Publishers, 1907.

We must congratulate Dr. Krauss for his discernment in giving us an English version of Prof. Men-

del's book. We must commend the publishers for modestly hiding so many excellencies in a volume of convenient size and of three hundred pages.

The author tells us that his object "is to bring cases demonstrated at the clinic, into the general perspective of psychiatry, and to enable the student to fill up the gaps, which the clinic must necessarily omit in the limited time given."

However, it is not to the college student alone that the book is valuable, nor to the general practitioner. The specialist will find it a fruitful source of information. Indeed the last would evidence little interest in his subject were he not curious to know how Mendel divides the Psychoses or how he interprets Dementia Precox or what his opinion is on many a disputed point. There are too few authoritative treatises or text books on insanity to neglect any of them.

No man will agree with all that another says on Psychiatry. The tabulated facts have reached no final arrangement. The interpretation and classification of to-day may be discredited to-morrow. However, until better times come, we must have books which will lead us to a correct diagnosis in the majority of cases and we know of no other book which can more efficiently guide us than the one under review. The amount of material which the volume contains is most extensive—the definitions and descriptions are charmingly concise, yet adequate—the order and proportion admirable. In the Supplement is "a guide for the examination of one mentally diseased, and for the preparation of the clinical history," which is in keeping with the high character of the rest of the book.

We can not speak too well of this "The Text-Book of Psychiatry." We remember Mendel as a kindly man, a keen observer and a great teacher. He came into the world, he did his work well and his work is over. M. L.

A Study of the Human Blood-vessels in Health and Disease. A Supplement to "The Origin of Disease." By Arthur V. Meigs, M. D., Physician to the Pennsylvania Hospital. J. B. Lippincott Company, 1907.

This is a well printed and attractive book of about one hundred and thirty pages, the most striking feature of which is its collection of excellent pictures. It is not an exhaustive treatise, nor does it make such pretension, but is rather a collection of personal observations, and consequently reflects the author's personality to a much more marked extent than does the usual medical book. In this instance the reader is gainer by such a condition, as the frankly personal opinions have the tone of good sense, independence and scientific spirit, and withal a healthy rebelliousness toward taking things for granted simply because they have been taught generally. On no subject that forms the content of a chapter is the discussion either orderly or complete. The study is interesting and suggestive in every instance rather than conclusive, and while it can not serve as a text book, its frank outlook and creditable freedom from conventional shackles, and most of all its good pictures make it a valuable adjunct (or possibly antidote) to the regular text book. The subject of the blood vessels is attacked in a narrow manner, the observations being almost solely of a purely histological nature. In doubtful places one misses entirely the evidence that embryology or experiment would bring. In this respect the main weakness of the book is apparent, and on this account it lacks conclusiveness.

The remarks on the capillaries are fresh, suggestive and valuable, but the section on new vessels falls far short on account of the total lack of the strong light that embryology would throw on the subject; neither has the research been orderly or sufficient. The opinions advanced by the author are based merely on isolated histological pictures that he has stumbled upon and may be right or wrong.

Under the heading "The Blood-vessels in Disease," the opinion is expressed that there is no lesion of the blood-vessels peculiar to each of the processes, inflammation, tuberculosis or syphilis, and little import is attached to the usually recognized pathological entity, syphilitic endarteritis. Under the discussion of arteriosclerosis, it is suggested that apoplexy may often come from the perforation of round ulcers of the vessel wall, analogous to perforations of stomach and intestinal ulcers. This idea is rather striking, when one thinks of the frequency of miliary aneurisms in the vessels of the brain, in cases dying of cerebral apoplexy. In the same chapter, however, the frequency of chalky deposits and stiffening of the arterial walls is admitted. No etiological factor for the vascular ulcers is suggested, but the recent experimental production of gastric ulcers by feeding colon bacilli, suggests to the reviewer the possibility of an infectious origin of such lesions.

In the discussion of vessels of the heart there has been no addition made to our present knowledge. The well-known terminal character of the vessels and the fact that the muscle cells are penetrated by capillaries is reiterated and good illustrations are given. Great stress is laid on the author's observation that the intima of the vessels is often found greatly thickened even in young people.

The section on the lungs is quite barren of new facts and that on the spleen admittedly inconclusive, the bare statement being made that its blood-vessels are prone to endarteritis. In the main the book is valuable chiefly because it is rather suggestive. Its barrenness is due chiefly to its reflecting the barren state of the knowledge we have of the blood-vessels, rather than to any fault of its own. C. B.

Pulmonary Tuberculosis. By Francis M. Pottenger, A. M. M. D., Monrovia, Cal. Wm. Wood & Co., 1908.

The work of Dr. Pottenger, which recently appeared from the press of Wm. Wood & Co., is, of the large number of books which have of late appeared on this subject, probably the most important one which has been written in the English language. From the wealth of clinical material over which he has command, he has culled a store-house of valuable information, which has been carefully compiled and arranged into a most practicable text-book. A description of the various chapters, many of which contain much original material, would be impossible within the brief limits of a review. Those on diagnosis and treatment are, however, of such importance as to demand more than passing notice.

The author has endeavored to give a full discussion of early and late diagnosis, and very thoroughly goes into an explanation of the cause of symptoms and the rationale of the physical signs. Methods of examination for the recognition of early signs are given the importance they deserve, which feature alone makes the work one of peculiar value, coming at a time when the necessity of earlier recognition of tuberculosis is so generally admitted.

In the discussion on the bacillus he describes the "splitter" or spore form, to which attention has been called by Spengler, and explains its staining characteristics. Methods of staining in order to differentiate between the human and bovine bacillus are also described, which is of the utmost importance, if recent observations in tuberculosis therapy shall have acceptance.

In the chapters on treatment, the importance of diet, rest and exercise, hygiene, fresh air, hydro-

therapy, etc., are thoroughly discussed; the advantages of sanatorium treatment are reviewed dispassionately and clearly; and these are all given their true value, as means by which the natural immunizing processes of the body are brought into activity.

The chapter on Specific Treatment has been written in the light of modern studies on immunity, and in it the author clearly demonstrates that cure in tuberculosis must be wrought by measures which are directed against the cause of the disease—the micro-organism; that it is accomplished through the establishment of immunity on the part of the patient to the tubercle bacillus and its toxins. The action of tuberculin as a means of artificially stimulating the machinery of immunization is exhaustively discussed, and the theories on which have been built our present day conception of tuberculin therapy are explained. The author is exceptionally qualified to discuss this subject by reason of his great experience with these remedies and his unusual opportunities for careful clinical investigation.

The chapter on Displacement of the Thoracic Viscera in Advanced Pulmonary Tuberculosis is most instructive; and his observations on the effect of advanced tuberculosis on the heart, much more complete than those found in the usual text-book. It is to be regretted that the author did not write a chapter on pathology.

His description of the preparation of some of the forms of tuberculin is open to criticism, particularly T. R., for its preparation is much more complicated than his description would suggest. The reviewer would also submit that its administration can not be carried out by such a regularly interspersed plan of dosage as is described. The intelligent and successful use of tuberculin is only accomplished as the result of careful observation and clinical experience, and while the administration of five milligrams of T. R., or more as the author recommends, might be a perfectly safe procedure in his hands, it might be fraught with grave and fatal danger in the hands of one not accustomed to its use. The rapidity with which tuberculin is springing into favor in all quarters is, the reviewer fears, going to react to its discredit, because of the abuses to which it must inevitably be put by those untrained in its use, and not conversant with the later theories of immunity.

The work throughout is annotated with marginal notes, which to many will be a convenience. Dr. Pottenger's book should find a place in the library of every progressive physician. G. H. E.

ARMY MEDICAL EXAMINATIONS, 1908.

The Act of April 23, 1908, reorganizing the Medical Corps of the Army, gives an increase in that Corps of six colonels, twelve lieutenant-colonels, forty-five majors, and sixty captains or first lieutenants, and establishes a Medical Reserve Corps as an adjunct to the Medical Corps. Under this recent act, the lieutenants of the Medical Corps are promoted to captain after three years' service instead of five, and the increase in the higher grades insures promotion at a reasonable rate all through an officer's military career. Furthermore, applicants who are found qualified in the preliminary examination are appointed first lieutenants of the Medical Reserve Corps and ordered to the Army Medical School in Washington, D. C., for eight months' instruction.

Preliminary examination for appointment in the Medical Corps will be held on August 3, 1908, and formal applications should be in possession of the War Department prior to July 1st. The applicant must be a citizen of the United States, between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and must have had at least one year's hospital training or its equivalent in practice. The examination will be held concurrently throughout the country at points where boards can conveniently be assembled, and due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general preliminary education may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

The large number of vacancies created in the Medical Corps by recent legislation makes it certain that all successful candidates will be recommended for a commission for several years to come.

It is desired to obtain and maintain a list of qualified medical men all over the country who are willing to serve as medical officers in time of emergency, and to such men the President is authorized to issue commissions as First Lieutenants, Medical Reserve Corps. It is recognized that it will be necessary to place only a limited number of these officers on the active list in time of peace, and it is hoped that young medical men throughout the country and medical officers of the militia of the various States may be sufficiently interested to secure positions on the Medical Reserve Corps list.

An applicant must be between twenty-two and forty-five years of age, a citizen of the United States, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and must have qualified to practice medicine in the State in which he resides. Examinations will be held in the near future and will embrace the practical medical subjects.

Full information concerning the Medical Corps and the Medical Reserve Corps may be procured upon application to the Surgeon-General, U. S. Army, Washington, D. C.

NEW AND NON-OFFICIAL REMEDIES.

The following articles have been added to the list of New and Non-Official Remedies approved by the Council on Pharmacy and Chemistry:

Lecithin Solution (Fairchild Bros. & Foster).
Lecibrin (Fairchild Bros. & Foster).
Glycerole Lecithin (Fairchild Bros. & Foster).
Casca-Laxative (H. K. Mulford Co.)
Bismuth Hydrate Comp. (H. K. Wampole & Co.)
Liquor Sedans (Parke, Davis & Co.)
Liquor Sedans Rx2 without Sugar (Parke, Davis & Co.)
Liquor Sedans with Cascara (Parke, Davis & Co.)

CHICAGO MEETING OF THE A. M. A.

The fifty-ninth annual session of the American Medical Association was held in Chicago, June 2 to 5. For the first time since the St. Paul meeting in 1901 the association met in the center of the country. To this fact, as well as to the greatly increased membership in the last few years is due the large attendance. The registration office opened at 8:30 on Monday morning, and it was apparent almost from the start that all previous records of attendance would be broken. In the four days of the session 6447 members were registered. Including those Chicago members who did not register, there were at least 500 in attendance whose names do not appear on the registration list. The actual attendance would not fall far short of 7000. Adding at least 10,000 guests, exhibitors, etc., makes the actual number of persons in attendance about 17,000. The general headquarters

and registration offices were located in the First Regiment Armory at Sixteenth and Michigan avenue, where were also found the sections on stomatology and pathology and physiology as well as the house of delegates, commercial exhibit, scientific exhibit, etc. The meeting places for the other ten sections were the First and Second Presbyterian churches, Sinai Temple, the Calumet Club and Grace Church Parish House, all within a few blocks of the general headquarters and the Orchestra Hall in the downtown district, in which the section on surgery and anatomy met. This hall seats 2500 and was supposed to be ample for the meetings of this section, yet it was on several occasions inadequate, being crowded to the doors.

The house of delegates was called to order on Monday morning at 10 by the president, Dr. Joseph D. Bryant of New York, who, in his presidential address, commended the work of the council on pharmacy and chemistry as well as that done by Dr. McCormack in educating the public. He also recommended that a standing committee be established to elaborate the ethical principles underlying the practice of medicine and that general instruction in ethical medicine be made a part of the undergraduate course. He dwelt particularly on the efforts now being made to restrict animal experimentation and recommended action by the house of delegates on this subject. Dr. Bryant also called attention to the invitation extended by President Roosevelt to him as president of the American Medical Association to take part in the conference recently held at Washington on the "Conservation of Natural Resources."

The report of the general secretary showed that the membership of the association on May 1, 1908, was 31,343, a net gain for the past year of 3828. The reports received from state associations regarding the organization of branch associations showed that two states had voted in favor of their establishment, seven had voted against and the remainder had at the time of the publication of the report taken no action. The appointment of a committee to consider uniform provisions for the regulation of county, state and American Medical Association membership was recommended. A communication was presented from the secretary of the American Association for the Advancement of Science, asking that the American Medical Association appoint representatives to the council of that body.

The report of the Board of Trustees included the customary report from the auditing company, showing that the entire business for the fiscal year of 1907 was $385,030.89; that the total expenditures of the year had amounted to $356,222.21, leaving a net revenue for the year of $28,808.68. Detailed statements of all the various accounts of the association's business were given showing the items in each case. The report showed that during 1907, 2,715,293 copies of The Journal had been issued, forming a weekly average of 52,217, an increase of 12½% over 1906.

The committee on medical legislation reported that the army medical reorganization bill and the Carroll Lazear pension bills had become laws during the last session of Congress. The importance of uniform and adequate state legislation on the practice of medicine and the preservation of public health was emphasized as well as the necessity of careful study of the problems involved. The committee recommended that pending the completion of the work now being done only those changes in existing laws which are imperatively needed should be attempted by state associations. The formulation of the vital statistics bill, endorsed by the United States Census Department, the American Public Health Association, the conference on uniform state laws of the American Bar Association and the American Statistical Association, was reported and the endorsement of the house of delegates was asked for this measure. The report of the Chicago conference on medical legislation was also given.

The council on medical education reported that the work of the council during the past year had been along the following lines:

1. The inspection and classification of medical colleges as (a), acceptable; (b), doubtful, and (c), unsatisfactory.

2. The conducting of an annual conference with representatives of state examining boards and leading educators for the discussion of the important problems of medical education and medical licensure.

3. The collection and compilation of data regarding (a) medical college students and graduates, and (b) regarding results of state license examinations.

4. A thorough investigation of preliminary and medical education in Europe.

5. Working for the advancement of the requirement of preliminary education in the United States to include a year's work in physics, chemistry, biology and modern languages.

6. Obtaining accurate information regarding high schools and universities in their relation to medical education.

The board of public instruction reported that it had secured a secretary, Dr. R. Max Goepp of Philadelphia, and that it was considering the establishment of lecture systems and of state boards of public instruction, and intended to publish articles in the magazines and public press for the enlightenment of the public on disease.

The committee on ophthalmia neonatorum advised the enactment of laws in each state regarding the registration of births and placing the control of midwives in the hands of the boards of health; that health boards distribute circulars to midwives and mothers on the dangers and prophylaxis of this disease; that state and local boards of health prepare and distribute proper prophylactic solutions with specific directions for their use; that proper records be maintained in all hospitals in which children are born; that periodic reports be made by all physicians to boards of health; that concerted effort be made along the lines of public education throughout the country. This report was approved by the chairmen of the sections on ophthalmology, obstetrics and diseases of women and hygiene and sanitary science.

The committee on scientific research recommended the appropriation of $200 for the assistance of each of the following:

Drs. D. J. McCarthy and M. K. Myers, Philadelphia, "An Experimental Study of Cerebral Thrombosis."

Dr. Karl Voegtlin, Baltimore, "Chemistry of the Parathyroid Glands."

Dr. Isabel Herb, Chicago, "A Study of the Etiology of Mumps."

Drs. R. M. Pearce, Albany, N. Y.; H. C. Jackson and A. W. Elting, "A Study of the Elimination of Inorganic Salts in a Case of Chronic Universal Edema of Unknown Etiology with Apparent Recovery."

Dr. H. T. Ricketts, Chicago, "An Investigation of the Identity of the Rocky Mountain Fever of Idaho with That Found in Western Montana."

On Tuesday afternoon at the third meeting of the house, the reports of the reference committee were taken up, the reference committee on medical education approving the work of the council on medical education and recommending that it be continued. The reference committee on reports of officers recommended the appointment of a committee of five to consider the elaboration of the principles of ethics. Resolutions condemning the legislative efforts to restrict animal experimenta-

tion were presented. The action of the board of trustees in preparing the second edition of the directory was approved. The reference committee on legislation and political action recommended the approval of the model law for vital statistics, which recommendation was adopted. The resolution presented by Dr. A. T. McCormack of Kentucky, requesting all state associations publishing or controlling medical journals to restrict advertisements to such preparations as were approved by the council on pharmacy and chemistry was adopted. A committee of three to confer with a like committee from the American Pharmaceutical Association in regard to drug reforms was authorized. The candidacy of Dr. C. A. L. Reed of Cincinnati for the United States Senate was endorsed.

On Thursday afternoon the annual election took place with the following results:

President—Dr. William C. Gorgas, Ancon, Panama.

First Vice-President—Dr. Thomas Jefferson Murray, Butte, Mont.

Second Vice-President—Dr. John A. Hatchett, El Reno, Okla.

Third Vice-President—Dr. Thomas A. Woodruff, Chicago, Ill.

Fourth Vice-President—Dr. E. N. Hall, Woodburn, Ky.

General Secretary—Dr. George H. Simmons, Chicago, Ill., re-elected.

Treasurer—Dr. Frank Billings, Chicago, Ill., re-elected.

Trustees (to serve until 1911)—Dr. Wisner R. Townsend, New York; Dr. Philip Mills Jones, San Francisco; Dr. William T. Sarles, Sparta, Wis.

The following nominations were made by the president and confirmed by the house of delegates:

Committee on medical legislation—Dr. Charles Harrington, Boston, Mass., to serve until 1911.

Council on medical education—Dr. Victor C. Vaughan, Ann Arbor, Mich., to serve until 1913.

Committee on transportation and place of session—Dr. M. L. Harris, Chicago, chairman, for three years.

The following were elected honorary members:

Dr. Edward F. Schaefer, Edinburgh, Scotland.

Dr. August Martin, Griefswald, Germany.

Dr. E. Treacher Collins, London, England.

The committee on awards reported the following awards in accordance with the report of the committee on scientific exhibit:

Dr. H. T. Ricketts, gold medal for research exhibit on tick fever.

Dr. Fenton B. Turck, diploma for exhibit illustrating pathology of peptic ulcer.

Northwestern University Medical Department, diploma for teaching exhibit, illustrating morbid anatomy.

Rush Medical College, diploma for teaching exhibit, illustrating morbid anatomy.

Dr. Charles H. Beard, diploma for exhibit of drawings of the human eyeground.

Dr. Maximilian Herzog, diploma for exhibit, illustrating early human embryology.

St. Mary's Hospital, Rochester, Minn., diploma for clinical and pathologic exhibit of stereoscopic photographs.

Dr. Edmond Souchon, diploma for improved method for the preservation and exhibition of anatomic specimens.

Dr. A. M. Stober, Cook County Hospital, diploma for exhibit, illustrating blastomycosis.

Dr. Mallory and Dr. Wolbach (Harvard), diploma for exhibit of drawings and photomicrographs, illustrating the classification of tumors.

United States Public Health and Marine Hospital Service, honorable mention for exhibit, illustrating the investigations of Dr. C. W. Stiles on bookworm.

Iowa State University, honorable mention for instructive tuberculosis exhibit.

Cincinnati Hospital, honorable mention for creditable group of specimens.

Philadelphia Polyclinic, honorable mention for creditable exhibit of group of teaching specimens.

Lying-in Hospital of New York, honorable mention for creditable exhibit.

The committee on transportation and place of session recommended Atlantic City as the next meeting place, which choice was agreed to by the house of delegates. The reference committee on legislation and political action reported, requesting the committee on medical legislation to arrange for a conference with the committee of one hundred, the surgeons-general of the army, navy and public health and marine hospital service with a view to securing co-operation on the establishment of a National Department of Health. After the transaction of some routine business the house adjourned.

One hundred and thirty-four members of the house were present out of a total membership of one hundred and forty-two. The meetings of the house were better attended than at any time since its organization. The business was dispatched with accuracy and rapidity, the most notable tendency being the reference of resolutions, communications, etc., to the appropriate reference committees without discussion, reserving the consideration of the questions involved until the reference committee had considered the matter and submitted a report.

The social events of the week were particularly attractive. On Monday night the secretaries of the state associations and the editors of the state journals met at dinner and completed the organization of a state secretaries and editors' association. A dinner to foreign guests as well as a number of other social events also occurred on Monday evening. On Tuesday evening twenty-seven alumni dinners were held in the various hotels and restaurants throughout the city, the largest being that of Northwestern University Medical School, held at the Illinois Athletic Club, at which over 800 alumni were present. On Wednesday evening the president's reception and ball was held at the Coliseum, thousands of members and guests being present. On Thursday evening the local profession tendered the members of the association a smoker at the Coliseum, at which the attendance amounted to about 8000. Numerous social atractions were provided during the day for the ladies and guests, including receptions at the South Shore Country Club, Chicago Women's Club, etc. The sections were all largely attended and the programs were of a high order. The session was in every way the most noteworthy of any which has yet been held, and it is anticipated that some years will elapse before the record established will be surpassed.

CALIFORNIANS REGISTERED AT THE A. M. A. MEETING.

The following physicians from California were registered as in attendance at the recent meeting of the A. M. A., Chicago, June 2d, to 5th:

W. W. Beckett, Mariana Bertola, Stanley P. Black, Adelaide Brown, C. C. Browning, William Fitch Cheney, C. C. Cottle, H. Bert Ellis, J. T. Fisher, N. K. Foster, Mary E. Hagadorn, George A. Hare, Jessie D. Hare, A. W. Hewlett, William E. Hibbard, Vard Hulen, H. A. Johnston, J. W. Jones, Philip M. Jones, C. D. Lockwood, I. A. McCarty, J. L. McLaren, H. G. McNeil, Caroline McQuiston, F. C. E. Mattison, Austin Miller, F. W. Miller, R. W. Miller, C. A. Morris, A. W. Morton, P. T. Phillips, T. C. Pounds, G. F. Reinhart, W. H.

Roberts, Wallace I. Terry, W. C. Tuckerman, H. H. Sherk.

F. K. Ainsworth, J. L. Arbogast, J. L. Benepe, C. A. Briggs, Solon Briggs, Gustav Dresel, T. C. Edwards, Martin Fischer, C. F. Griffin, W. S. Johnson, J. H. McBride, Kaspar Pischel, H. M. Robertson, A. F. Rooney, H. L. Wagner, C. F. Welty, R. L. Wilbur, Norman Bridge, H. D. Crabtree, Martin Krotoszyner and Harry M. Sherman.

COUNTY SOCIETIES

RIVERSIDE COUNTY.

The Riverside County Medical Society held its concluding meeting of the year June 7th, at the Victoria Club, with the wives of the doctors as guests. One of the honored guests was Dr. George Martin of Los Angeles, who has recently returned from England, where he has been associated with Dr. Wright of opsonic fame.

Dinner was served at 7 o'clock in the faultless style of the Victoria Club. The tables were prettily decorated with sweet peas and ferns. Dr. Martin read a very interesting and advanced paper along the lines of vaccine therapy, his subject being "The Role of the Immunizator in Modern Medicine." This was followed by discussion. During the reading of the paper and the discussion, the ladies entertained themselves with bowling and billiards.

A pleasant incident of the meeting was the presentation of a gold-headed cane to Dr. J. B. Baird, who has passed his sixtieth milestone. The presentation remarks were happily made by Dr. W. B. Sawyer, in behalf of the society, and were responded to in a felicitous manner.

Included in the company were Dr. George Martin of Los Angeles, Dr. and Mrs. C. Van Zwalenburg, Dr. and Mrs. Thomas R. Griffith, Dr. and Mrs. G. E. Tucker, Dr. and Mrs. H. A. Atwood, Dr. and Mrs. W. B. Sawyer, Dr. and Mrs. H. R. Martin, Dr. and Mrs. C. S. Dickson, Dr. and Mrs. W. B. Payton, Dr. and Mrs. J. M. Colburn, Dr. Louise Harvey Clarke, Mrs. A. S. Parker, Miss Agnes Baird, Dr. J. G. Baird, Dr. A. W. Walker, Dr. C. Girdlestone, Dr. Karl Sleeper and Dr. W. W. Roblee.

SAN FRANCISCO COUNTY.

Meeting of May 12th, 1908.

Report of cases, Dr. Krotoszyner:

Three cases of bilateral cystic kidney. Up to 1901, when Jas. Israel's treatise upon the surgical diseases of kidney appeared, only four cases of bilateral polycystic degeneration had been recorded. To this number Israel added four of his own cases. The main reason for the failure of establishing a correct diagnosis is the absence of characteristic symptoms, until suddenly severe uremic symptoms set in, quickly followed by the patient's death. The first case is of this type. It concerns an elderly lady of 60 who was treated at the German Hospital for vague gastric disturbances. Suddenly uremic symptoms set in under which the patient died. The autopsy showed in both kidneys the typical picture of polycystic degeneration with hardly any secretive kidney tissue left. The lesson learned from the first case aided in the diagnosis of the second. A teamster of 41 complained of pain in both kidney regions which had bothered him off and on for several years. When coming under observation large tumors could be felt in both kidney regions. Urine examinations showed the same findings as present in chronic interstitial nephritis. Patient was observed at German Hospital for a number of weeks until his death. Two cystoscopic examinations were made showing low functional capacity of the kidneys. Amount of urea in the daily quantity of urine determined during fifteen days varied between 7 and 12 grammes. Blood cryoscopy gave 0.6. Phloridzin test never revealed the presence of sugar. Blood examination gave the low hemoglobin point of 55%; a decrease of red cells to 1,900,000; and a slight leukocytosis (up to 17,000). Tumors on both sides of abdomen which apparently represented the enormously large kidneys were palpable. They grew rapidly in size. Surface of both tumors is regular. Tumor on right side somewhat smaller than that on left side. Patient died under symptoms of deep uremic coma. Autopsy by Dr. Ophuls presented two very large polycystic kidneys. Liver of normal size showed quite a number of small cysts filled with clear liquid. Left kidney weighed 2 lbs. 2 oz. and measured 23x30 cm. Right kidney weighed 2 lbs. and measured 20x10 cm.

Third case concerned a woman of 28. Had suffered ten years ago from hematuria, which lasted three days. After curettement she was seized with severe pain in left loin followed by high fever. At the hospital septic temperatures and cloudy urine were observed. On left side of abdomen, mass was palpable which seemed to belong to the left kidney. Cystoscopy showed many ulcerations on bladder wall. Urine from left ureter cloudy and contained much pus; urine from right side normal. On account of relatively good functional values found in the urine of the left side a nephrotomy was advised which was performed two years ago; a great cyst filled with pus was evacuated. A few months later patient underwent a laparotomy for ventrofixation. About a year later patient suffered again from general malaise and frequent urinations, pressure in abdomen and severe headache. On palpation the right kidney appeared enlarged with irregular surface, its lower pole palpable at navel line. Left kidney not enlarged upon palpation. Cystoscopy reveals a normal bladder. Clear urine collected from both ureter catheters. Functional tests on both sides below par. Microscopically nothing of note. Exposure of right kidney presents picture of a typical polycystic kidney. All cysts are evacuated and nephrofixation is performed. This case presents the rare case of a bilateral kidney in which the involvement of one organ is follew dafter a long time by involvement of its sister organ. This case further proves the value of functional tests as otherwise the left kidney might have been removed. Patient is gradually improving and at present is in a comparatively good condition.

Dr. Barbat, discussing paper read by Dr. Krotoszyner:—With regard to the operation for cystic kidneys, we find in the vast majority of cases that the congenital cystic kidneys are bilateral and it is very wise if an operation is attempted and the kidney found to be cystic, to defer the nephrectomy until the other side is investigated. My preference is to do an interior operation. Then the second kidney can be explored very easily. It is very wise to explore the second kidney before attempting to operate upon the first, particularly in a case of a congenital cystic kidney.

Dr. Silverberg, discussing paper read by Dr. Krotoszyner:—The remarkable thing about these patients is that they live to this age before the symptoms manifest themselves.

Dr. Krotoszyner, closing discussion:—I think that at present palpation of the kidney is more or less abandoned. I think that ureteral catheterization has made this thing more or less unnecessary. I admit in some instances where it is impossible to make a cystoscopic examination or get evidence before the operation of the condition that the palpation is indicated. As regards the age of these patients having polycystic kidneys, I think that if Dr. Silverberg will look over the literature he will find that almost all ages have these cystic kidneys. It is characteristic that they often go unrecognized

for years. One author quoted cases operated on 10 or 15 years after the polycystic condition was recognized by the clinician. I do not think that the age is anything which should be necessarily wondered at.

SANTA CLARA COUNTY.

The regular society meeting was held May 20th at the St. James Hotel with the following present: Drs. Jordan, Ulrich, Fraser, Tourtillott, Blair, Hopkins, Newell, Cooper, Goodridge, Wagner, Kapp, Simpson, Cothran, Hogg, Miner, Paterson, Kocker, Van Dalsem, Snow, McGinty, Burns, Whiffen, Harris and Park. Dr. Whitney and Dr. H. C. Moffitt were the guests of the Society.

Dr. Cothran presented a most interesting case showing extensive destruction of bony and soft tissues from syphilis.

The society accepted the use of a room from the Carnegie Library for the placing therein of the society library.

Dr. Herbert C. Moffitt of San Francisco read a paper entitled "Clinical Features of Influenza since the Pandemic of 1889-1890." A general discusssion followed the reading of Dr. Moffitt's paper, as well as the society thanking Dr. Moffitt for his courtesy.

Dr. Wm. Simpson, our delegate to the State meeting, reported his success in securing the State Society meeting for San Jose in 1909, and already the members of this County Society have started in to make their plans for the largest and best State meeting ever held in California. The meeting adjourned at 10:15 p. m.

K. C. PARK, Secretary.

SONOMA COUNTY.

April 9 Dr. A. W. Morton gave us many fine ideas on Bier's treatment of surgical diseases. Dr. A. Schloss of San Francisco was also a visitor at this meeting, held in Dr. J. J. Keating's office, Sebastopol. We had no meeting on May 14, owing to the sickness of Dr. H. C. Moffitt, San Francisco, who intended to talk on "Internal Medicine." On June 11, we met in Dr. J. W. Clark's office, Santa Rosa, those present being: President, J. H. McLeod, W. J. Kerr, G. W. Mallory, R. M. Bonar, C. H. Thompson, F. O. Pryor, Jackson Temple, J. W. Clark, E. M. Yates, P. A. Meneray, W. C. Shipley, J. J. Keating, Edward Gray, E. J. Ruddock and Henry Meyer, San Francisco, and Professor Josiah Keep, Mills College. President McLeod introduced Dr. Henry Meyer with a few well-chosen words, who immediately entered upon the discussion of the subject, "Intro-vesical Operations Without Knife or Anesthetic with Special Reference to the Removal of Benign Tumors." The doctor gave the credit of this subject of surgery to Dr. Nitzer, who died at 47. Dr. Nitzer was the pioneer in intro-vesical surgery, both as to how to diagnose and treat, and also the instruments were devised by him. Dr. Meyer said that only two or three men in this country were in this work. He explained what could be done in removing benign tumors with the snare and then by pressing a button cauterizing the base of tumor. He explained how he opened the ureteral orifice by a pair of scissors, very small, and with the forceps he extracted calculus from urethra. He demonstrated how to take pieces of stone, catheters or any foreign body from bladder. This he did on the phantom bladder.

We spent a most instructive evening, and gave to Dr. Meyer a hearty vote of thanks for his clear, decisive instructions and advice. After a delicate lunch we agreed to meet in Guerneville, July 12, at 11 a. m. There we shall hear a sermon on a proper subject for laymen and physicians.

G. W. MALLORY, Secretary.

DR. CHARLES S. PORTER NOT DEAD.

Dr. Charles S. Porter of Burnett, reported as dead in the July issue, is alive and kicking—very much so. The error occurred inadvertently in the secretary's report.

CHANGES OF ADDRESSES.

Barbat, Wm. F., from 2305 Howard st., to 2267 Howard st., San Francisco.

Waiss, Alex. S., from Grosse Bldg., to Central Bldg., Los Angeles.

Barkan, Adolph, from 1700 California st., to Butler Bldg., San Francisco.

Sewell, Edw. C., from 1700 California st., to Butler Bldg., San Francisco.

Weber, Phil H., from Redding, Cal., to Winthrop, Cal.

Wheeler, Chas. H., from Fall River Mills, Cal., to Oakland.

Jones, H. Isaac, formerly Starr King bldg., San Francisco, to First National Bank Bldg., Oakland, Cal.

Rooney, Henry T., from Winthrop, Cal., to San Francisco.

Baum, R. W., from 2502 Washington st., to Hastings Bldg., 162 Post st., San Francisco.

Nelson, Lois, from 1201 Devisadero st., San Francisco, to 816 54th st., San Francisco.

Rosencrantz, Nathaniel, from 1323 Devisadero, to 25 Third st., San Francisco.

Eckhardt, A. O., from Gualala, Cal., to Europe.

Lehnhoff, Wyld Fred, from 1163 Van Ness ave., to Guatamala, Mexico.

Berndt, R. M. H., from 1850 Pine st., to 1388 Geary st., San Francisco.

Harris, H., from 2470 Bush st, to 1204 Sutter st., San Francisco.

Edwards, W. R., from 530 5th st., to 101½ So. Broadway, Los Angeles.

Greene, L. L., from 1362 Peralta st., Oakland, to 2937 Cambridge ave., Berkeley.

Ryfkogel, H. A. L., from 1380 Sutter st. to 2209 Sutter st. San Francisco.

Howard Katherine I. from 2526 Ocean Boulevard, to 1542 California st., San Francisco.

Gibbons, Henry, Jr., from 2405 Fillmore st., to Union Square Bldg., 350 Post st., San Francisco.

Gibbons, Morton R., from 2405 Fillmore st., to Union Square Bldg., 350 Post st., San Francisco.

Gibbons, Henry Walter, from 2405 Fillmore st., to Union Square Bldg., San Francisco.

Voorsanger, Wm. C., from 2502 Washington st., to Hastings Bldg, Post st. and Grant ave., San Francisco.

Belknap, Florence A., from Palo Alto, Cal., to 1498 Fulton st., San Francisco.

Smiley, W. C., from Pasadena, to Beaumont, Cal.

Byars, Alfred H., from Fresno Flats, to Madera, Cal.

Boyd, Samuel G., from 1659 Webster st., to Voorhies Bldg., San Francisco.

Thorne, Walter Scott, from 1434 Post st., to Union Square Bldg., San Francisco.

Cole, J. A., from Yuba City, to Park, Cal.

Park, Lottie C., from 426 6th st., Los Angeles, to Broderick, Cal.

Werner, A. F., from 1627 Grove st., to 883 San Pablo ave., Oakland.

Gedge, D. McC., from 925 Golden Gate ave., to 503 Market st., San Francisco, care Metropolitan Life Insurance Company.

Renz, C., from 818 Grove st., to Chronicle Bldg., San Francisco, care Dr. E. L. Brune.

Cloud, M. M., from Auditorium Bldg., to Grant Bldg., Los Angeles.

Bine, Rene, from 2632 Laguna st., to Union Square Bldg., San Francisco.

Alden, Bertram F., Ortman Bldg., San Francisco. Hours, 2 to 4. Residence, 4200 California st.

Bricca, C. R., from 665 Green st., to Butler Bldg., San Francisco.

Delmont, Francis, from 831 Oak st., to 610 Green st., San Francisco.

Howard, Jos. Louis, from 1059 O'Farrell st., to Butler Bldg., San Francisco.

Sherman, Harry M., from 2210 Jackson st., to Union Square Bldg., San Francisco.

McChesney, Geo. J., from 2210 Jackson st., to Union Square Bldg., San Francisco.

Hopkins, M. F., from 38 N. 2d st., to Ryland Bldg., San Jose.

Conlan, F. J. S., from 1766 O'Farrell st., to Butler Bldg., San Francisco.

Dillon, Jno. Francis, from 829 Fell st., to 1992 15th st., San Francisco.

Smith, Kirby B., from San Leandro, to Melrose, Cal.

Cluness, W. J., Jr., from 2403 Fillmore st., to Union Square Bldg., San Francisco.

Hopkins, Wm. E., from Gough and Turk sts., to Butler Bldg., San Francisco.

Hopkins, Edw. K., from Gough and Turk sts., to Butler Bldg., San Francisco.

Mardis, Benj. A., from 6th ave. and Clement st., to Ortmann Bldg., San Francisco.

Gallewey, John, from 1025 Devisadero st., to Ortmann Bldg., San Francisco.

Wilson, J. A., from 2673 California st., to Ortmann Bldg., San Francisco.

Leland, T. B. W., from 1910 Vallejo st., to Ortmann Bldg., San Francisco.

Clark, J. R., from 1809 Gough st., to Ortmann Bldg., San Francisco.

Berg, Adolph, from Lombard st. and Montgomery ave., to Ortmann Bldg., San Francisco.

Keeney, Jas. W., from 2220 Clay st., to Ortmann Bldg., San Francisco.

Shumate, Thos. Edw., from 2707 California st., to Ortmann Bldg., San Francisco.

Mix, P. A., from Towles, Cal., to Exeter, Cal.

Morrow, Howard, from 836 Turk st., to Butler Bldg., San Francisco.

Winter, Albert H., from Wilcox Bldg., to Wright & Callender Bldg., Los Angeles.

Pierce, Chas. W., from Collins Bldg., to Wright & Callender Bldg., Los Angeles.

Mayne, W. H., from Collins Bldg., to Wright & Callender Bldg., Los Angeles.

Schmoll, Emile, from 1059 O'Farrell st., to Union Square Bldg., San Francisco.

Zumwalt, Fred H., from Van Ness ave. and O'Farrell st., to Butler Bldg., San Francisco.

Huntington, Thos. W., from 2403 Fillmore st., to Union Square Bldg., San Francisco.

Tomlinson, R. F., from 1944 Fillmore st., to Union Square Bldg., San Francisco.

Bryant, Edgar R., from 1944 Fillmore st., to Union Square Bldg., San Francisco.

Hart, Morton E., from 103 Park ave., New York, to 246 Powell st. (Lincoln Bldg.), San Francisco.

Hopkins, Howard H., from 2373 Jackson st., to 1831 Polk st., San Francisco.

Abram, Henry, from 1800 Sutter st., to Butler Bldg., San Francisco.

Kelsey, Arthur L., from the H. W. Hellman Bldg., to the Wright & Callender Bldg., Los Angeles.

Mattison, Eugene G., from Stowell Bldg., Pasadena, to Chamber of Commerce Bldg., Pasadena.

Weeks, Alanson, from Post and Gough sts., to Union Square Bldg., San Francisco.

Bumgarner, G. M., from Escondido to Imperial, Cal.

Brooks, Joseph Scofield, from 3773 Clay st., to Butler Bldg., San Francisco.

Pinkham, Chas. B., from 2703 Bush st., to Butler Bldg., San Francisco.

Kingwell, Jno. Joseph, from 1107 Franklin st., to Butler Bldg., San Francisco.

Tobriner, Oscar, from 1800 Sutter st., to Butler Bldg., San Francisco.

Smith, Larz A., from 1546 Ellis st., to Butler Bldg., San Francisco.

Baum, Maurice L., from 1007 Fillmore st., to Butler Bldg., San Francisco.

Dolman, Percival, from 2510 Bush st., to Butler Bldg., San Francisco.

Morton, Andrew W., from 775 Cole st., to Butler Bldg., San Francisco.

Schloss, Aaron, from 1301A Devisadero st., to Butler Bldg., San Francisco.

Fitzgibbon, Frank T., from 633½ Oak st., to Butler Bldg., San Francisco.

Peterson, A. C., from Union Bank Bldg., Oakland, to Butler Bldg., San Francisco.

Harding-Mason, Jno., from 1673 Sutter st., to Butler Bldg., San Francisco.

Spencer, Jno. Campbell, from 836 Turk st., to Butler Bldg., San Francisco.

Goss, Alice M., from 1792 Sutter st., to Butler Bldg., San Francisco.

Haskell, Carrie Goss, from 2984 Clay st., to Butler Bldg., San Francisco.

Glover, Mary E., from 2961 Buchanan st., to Butler Bldg., San Francisco.

Wells, Edith C., from 1800 Buchanan st., to Butler Bldg., San Francisco.

Tait, F. Dudley, from 1879 Sutter st., to Butler Bldg., San Francisco.

Jones, Phillips Mills, from 2210 Jackson st., to Butler Bldg., San Francisco.

Cooper, C. M., from 2411 Fillmore st., to Butler Bldg., San Francisco.

Brunn, Harold, from 2411 Fillmore st., to Butler Bldg., San Francisco.

Jellinck, E. O., from 943 Van Ness ave., to Butler Bldg., San Francisco.

Deaths.

San Francisco Co.—D'Arcy, W. N.

Reinstated.

Ross, R. O., Fresno, Cal.

New Members.

Oatman, H. C., Granger Blk., San Diego, Cal.
Lewis, J. Perry, 1067 6th st., San Diego, Cal.
Lewis, E. M., 1607 6th st., San Diego, Cal.
Winship, W. A., 930 Washington st., San Diego.
Corey, Martha D., La Jolla, Cal.
Ross, R. O., Fresno, Cal.
Mitchell, C. O., Laton, Cal.
Conran, P. J., 1548 McAllister st., San Francisco.
de Marville, H. B., 1424 Gough st., San Francisco.
Haderle, J. M., 628 Hayes st., San Francisco.
Spiro, H., 1325 Octavia st., San Francisco.
Stephens, Jno. Miller, Shreve Bldg., San Francisco.
Whitney, Jas. L., 1316 Sutter st., San Francisco.
Juilly, Geo. H., 2504 Howard st., San Francisco.
Alexander, E. W., 16 Culloden Park, San Rafael, Cal.
Onesti, S. J., 1556 Green st., San Francisco.
Warren, H. S., 1012 Washington st., San Francisco.
Collins, Asa W., 3303 Sacramento st., San Francisco.
Buell, W. E., 301 Penn ave., San Francisco.
Crook, Emma L., 1814 San Bruno ave., San Francisco.
Brady, Jos. G., 1145 Guerrero st., San Francisco.
Quigley, Jno. M., 501 Cole st., San Francisco.
Molony, Jas. J., 20th and Valencia sts., San Francisco.
Means, Samuel W., 1166 O'Farrell st., San Francisco.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -
Butler Building, San Francisco.

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI AUG., 1908. No. 8

EDITORIAL NOTES.

SIGNS OF THE TIMES.

It is noteworthy that, of four orations (including the president's address) delivered at a recent meeting of the A. M. A., three had more or less to do with, or else directly accented, a particular desideratum—the education of the public in matters pertaining to public health and the work of the physician in securing sanitary improvements. Dr. Burrell, the president, gives as the title of his address, "A New Duty of the Medical Profession; The Education of the Public in Scientific Medicine." Dr. Harrington, in the oration on State Medicine, discusses in a masterly manner the movement to secure a Department of Public Health, justly arguing that such should be developed from the present Public Health and Marine Hospital Service, but pointing out most clearly that to obtain a body competent to deal with national problems of sanitation, quarantine, etc., a constitutional amendment will be required; to secure this, the public must be educated to see its necessity. Dr. Thayer, in the oration on Medicine, the title of which is "Some Relations of the Physician to the Public," discusses the same question. Is all this without significance? About four years ago Dr. McCormack, in his talks to county medical societies all over the country, urged the dropping of the foolish robe of secrecy with which our profession had clothed itself, and the open and frank discussion of our work and our problems with the lay public. For at least three years, your JOURNAL has, in season and out, preached the same thing, urged upon county societies that they hold meetings with the public and with various classes of citizens at which meetings matters of common interest should be discussed. We have all seen the absurd opposition, originating in ignorance or misunderstanding, to public health legislation and to the enforcement of measures intended for the protection of the public, which we as physicians have urged. Now, shall we be in the front rank of the procession, or shall we drag along toward the rear? In the matter or reorganization, California was one of the first states to adopt our present plan, founding the whole structure of medical organization on the county society unit. Shall we again be among the first to take up this matter of public education at home, and see to it that all over our state the people are taught the nature of our efforts in their behalf and their criminal apathy? Tuberculosis kills more people in this country every five years than died in the whole course of the civil war; and tuberculosis is a preventable disease. Typhoid fever costs the community millions of dollars each year; and typhoid fever is a filth disease. Should not every citizen of our state know that if he gets typhoid fever it is because he has eaten or drunk somewhat from the urine or the feces of some other person? And that he has done so because of criminal carelessness? This movement is surely coming; shall we lead it or be driven by it?

IMPORTANT SUGGESTION.

For most of the years of its life, this JOURNAL has been one of those to raise its voice in the demand that more physicians take an active interest in the political control and government of our states and of our nation. Practically all law making has been done since the United States began as such, by lawyers. As a result, we have more laws than we know what to do with and our courts are, almost without exception, devoted to the matter of finding new technicalities in and conflicts between these numerous laws. The people have suffered. Public health legislation has been ignored. The voice of the scientific minister to the health and welfare of the people has not been heard, as it should have been, in our legislative halls. Again is this matter forced upon our attention, and this time from an entirely new source. Mr. Gillett, the Governor of California, under date of June 15th, has written the letter which follows to the Councillor for the 8th District, Dr. Parkinson. The letter is most significant, and, with the consent of the Governor and of Dr. Parkinson, we very gladly present it to you herewith for your careful consideration. Is it not timely? Is it not sound common-sense? Should not medical men take their place in our legislatures to the end that the

public good and the public health be more adequately served? It is a sacrifice, of course. A sacrifice of time and energy, to go to the legislature and "stand for" all that there happens; but is it not our duty, and are we not neglecting our plain duty to the people when we ignore this governmental function which is ours, not alone as citizens, but as members of a profession that has for its charge, the public health? It would seem so. It is true that a few distinguished physicians have, in the past, devoted a portion of their time and their energies to this duty. But there should be more such and the influence of our profession should be felt in the houses of our legislature, not spasmodically, but increasingly with each passing year. It is not a right we should claim, but a duty we should perform. Shall we perform it?

> "As the time for nominating Senators and Assemblymen throughout the state is fast approaching, there is one thing that I would like to call to your attention that I trust will be presented to the medical society. I think it is important that there should be at least two physicians in the Legislature, either in the Senate or Assembly, or both, to look after matters pertaining to the practice of Medicine in this state, that may come up before the Legislature for consideration. One can't tell just exactly what bills will be presented or how meritorious they may be. I would like to have somebody who is connected with the Senate or Assembly to consult with concerning legislation of this character, and would therefore like to see several members of your profession elected. I think it is very important that the medical profession should take an active interest in these matters, and believing that you entertain the same belief I call the matter to your attention so that some effort may be made, if the doctors of the state think necessary, to secure such representation."

ANOTHER DECISION.

The Supreme Court, in Bank, under date of June 15th, 1908, has recorded another decision anent the law regulating the practice of medicine, etc., in the State of California. Technically, it is the case *ex parte* C. D. Greenhall, on habeas corpus; Crim. No. 1441. Greenhall, holding himself out to be a "chiropractic," and so practicing whatever that peculiar art may be, in Los Angeles, was arrested because he did not have a license so to practice. Unfortunately, the complaint upon which he was arrested was loosely drawn and alleged that he did unlawfully treat the sick or afflicted by a system or mode known as the "chiropractic;" it did not allege that he practiced or held himself out as practicing such a system of treating the sick or afflicted. On this technicality the court spent most of its energies; the point is a minor one, though it will be valuable to remember. The court seemed to take the attitude that the loose wording of the complaint would apply to one who "incidentally and gratuitously suggests or puts into operation some method of treatment in the case of one who is 'sick or afflicted,'" in contra-distinction to one who practices such a method as a means of livelihood. Thus any one who tendered his services or who actually came to the relief of some injured, sick or afflicted person in an emergency, for instance, if he did not possess a license from the Board of Medical Examiners so to do, might be held liable under a complaint such as this one. The point is well taken and a chance for some further legal absurdity is in consequence avoided. But all this is merely incidental; doubtless if a proper complaint is drawn and Greenhall is again arrested, he will be convicted without redress. The valuable portion of the decision in question is contained in the closing paragraph. It must be remembered, by the way, that in the plaintiff's brief on appeal it was claimed that the law regulating the practice of medicine was unconstitutional. On this point the learned justices of the Supreme Court have the following to say:

> "In view of our decisions on the general subject, and the later decisions generally of courts of other states, we are not particularly impressed by the argument made in support of the contention that the legislative act of 1907 is unconstitutional. Because of our conclusion upon the question of the sufficiency of the complaint, it will not, however, be necessary to consider this contention."

It would appear from this that the long years of uncertainty (on the part of those who wish to be uncertain) are over and that it may from now be taken as an assured fact that the law is constitutional and will be so held in every essential particular by the court of last resort in our state. This is indeed good news and we may with good reason rejoice; the holding or dismissal of Greenhall is a small matter in comparison with the opinion as to the constitutionality of the law. This will be a sad blow to the small but compact circle of "sore heads" and their diploma mill friends; but that also is cause for rejoicing.

OPHTHALMO REACTION.

Quite a little has appeared during the past few months concerning the ophthalmo-tuberculin reaction. It is pretty generally understood by this time and is based upon the principle that a small quantity of tuberculin dropped into the conjunctival sac of a person having tuberculosis will set up a supposedly mild conjunctivitis, and it is assumed that the reaction thus caused is both harmless and at the same time pathognomonic of the disease. Neither of these assumptions is absolutely correct. There are now recorded a not inconsiderable number of instances in which the reaction set up was far from mild, causing, in some cases, dangerous inflammation with tissue destruction. And, furthermore, the reaction is not pathognomonic. For instance, if the tuberculin is dropped into the eye of a perfectly healthy person, no

reaction will occur; yet, after the passage of a period of time as yet not determined as to limit, if the agent be dropped again into the same eye of the same healthy individual, the typical reaction of tuberculosis will be noted. We are all too prone to take up these newly announced procedures, to pin faith to them, and to use them far too recklessly. In all things in which the element of possible danger enters, great caution should be the rule until those who are competent to observe and are so situated that they may study out these problems in all their details, have reported. And, moreover, as was pointed out at the recent meeting of the State Society, it is not well to accept any sign as absolutely pathognomonic of any disease; all seem to be fallacious in some degree.

A NEW HOME.

In April, 1906, the San Francisco County Medical Society lost its home and its library, which was fast reaching considerable proportions and distinct value. Practically every one of its members likewise suffered, and for a time the Society was in a very precarious condition. But the meeting for June, 1908, two years and two months after the disaster, marked the beginning of a change for the better; at that time the Society held its first meeting in its new home. Once more San Francisco County has a real "home" for its library and for its meetings, and, through the most unbounded generosity of our brother physicians in all parts of the world, it also has, once more, a library of no mean proportions for the use of its members. About nine rooms on the top floor of the Butler Building (corner of Geary and Stockton streets) were secured before the building was finished and these have been thrown together forming one large meeting room, with two smaller reading rooms adjoining. All of these rooms are, or shortly will be, lined with shelving for the library volumes and make a most attractive place, not alone for the regular meetings of the Society, but also for reading and study. The effect has already been noted and applications for membership are coming in with increasing numbers. We certainly congratulate the Society upon its rehabilitation, and again take this opportunity to thank all and sundry who have so generously given books to the library. We wish the Society a very long and a very useful life.

THE NEW REGISTER.

It is quite within the range of possibility (though, where a printer is involved, it is never certain) that the 1908 edition of the Register and Directory will be issued before the end of the present month of August; at any rate, it is now in the hands of the printer. The number of changes, as already noted in a previous issue of the JOURNAL, is very much in excess of any previous year. Undoubtedly there are many changes of address which have not come to our attention; if yours is one, please do not kick. We have done everything humanly possible to secure all the changes of address throughout the state. In some instances the secretaries of county societies, though importuned repeatedly to do so, have failed to send us the changes within their territory; later, some of these will doubtless "kick." In most counties the Register will be sent to the Secretary of the County Medical Society for distribution to the members. If you do not receive a copy by September, inquire of your local Secretary. The list of "address unknown" is growing. It is the intention, eventually, and as soon as the list of licentiates can be checked, to make a section of the Register which will include the names of all licentiates located outside the state. That is a long and a difficult task and it may be a year or two before it can be done, but it will come, with time.

A WORK OF VALUE.

For some years the *Journal of the A. M. A.* has published, in the closing number of each half-year, an index of current medical literature the real value of which is probably not appreciated as it should be. This index is reprinted as a separate pamphlet and can be had from the *Journal* office at a nominal sum. In the issue of the *Journal* containing the last index was an editorial asking for an expression of opinion from the profession as to whether or not this work—a by no means small task—should be continued or not. Apparently it has not received such support and endorsement from the profession at large as it really merits, and hence the query from the editor of the *Journal*. By all means, if our opinion is desired, continue the index. Undoubtedly it will become more popular as time goes by, for the number of physicians who are making use of current medical literature is steadily growing and the index will be more generally used. Then, too, it must not be forgotten that, in all probability, a considerable number of members make use of the index contained in the special number of the *Journal* and do not send for the reprint; thus many use it who are never heard from. It is certainly of the greatest assistance to any one who desires to go over the recent publications in periodicals on any special subject.

A NEW DEPARTURE.

In the advertising pages we have a number of cards of physicians who have recently changed their address and in this way desire to call that fact to the attention of their friends in the Society about the state. It is a new thing for the JOURNAL to publish such cards, though the matter has been under discussion by the Publication Committee many times. However, so many changes have taken place in the last two years that it seemed to us that it would be a matter of convenience to print these notices; hence their appearance. Possibly there are some members in Los Angeles, or in other parts of the state who would like to avail themselves of the same privilege. If such there be, a letter addressed to the office of the JOURNAL, Butler Building, San Francisco, will have

an immediate reply giving rates, etc. There ought to be enough physicians in the state, who have recently moved to permanent offices, to fill several pages and we shall be very glad to hear from them.

IS THERE A REASON?

Somebody once coined a very beautiful polysyllabic word doubtless having one or more perfectly good Greek roots, which he advised a palpitating world meant the antagonism to change (not coin-of-the-realm "change," but a changing of conditions that are). The word, alas! has departed from memory, but the condition so eloquently described by it is forced upon one's attention with each passing day of life in this bitter vale of tears. About five years ago the JOURNAL had its official home at 31 Post street, San Francisco; something over four years ago it moved from Post street to the Y. M. C. A. Building, and several notices were sent to each one of our exchanges and to all with whom there passed much correspondence. It may be recalled by some that in April, 1906, we were forced, through no fault of our own, and, we believe, with considerable regret on the part of the landlord, to vacate the Y. M. C. A. Building offices and seek others. Again notices to this effect were sent out to all and sundry, though with less confidence in the result, be it known, than when the previous notices were mailed. So respectably conservative are a goodly number of people, even those who control the destinies—and the mailing lists—of most of our exchanges, that a large quantity of mail still comes to us addressed to "31 Post street" (where we have not been for some five years) and a still larger amount is to this day addressed to us at the "Y. M. C. A. Building"—which we hastily left more than two years ago. Would that some mighty intellect might be put upon the world to elucidate the wherefore ness of this peculiar persistency! Kind friends, the office of the CALIFORNIA STATE JOURNAL OF MEDICINE, and of the Medical Society of the State of California, and of the Secretary of the latter and the editor of the former, has been changed from 2210 Jackson street, San Francisco, to the Butler Building, San Francisco. Sometime within the next quarter century will you try and note this fact and change our address on your mailing list? Thanks.

SUCH A BUSINESS!

The editor of the *Journal of the South Carolina Medical Association* has resigned from the American Medical Editors' Association and a recent number of his publication sets forth some correspondence explaining the whyfor. You see, the editor in question is a very active gentleman and his state organization is behind him, as it should be. He has repeatedly come out with arguments to the effect that the members of the society, other things being equal, should patronize those firms that advertise in their journal, and has urged the members, whenever a detail man comes into their office, to ask him whether his firm advertises with their journal, and if not why. That is simple and reasonable. (Incidentally, in passing, let us urge upon the members of our own California Society to do the same thing—and stick to it.) But this did not meet with the full and cordial approval of the last-year president of the Medical Editors' (?) Association, who is a nice, fussily maternal old gentleman, and he chid-ed-ed-ed the South Carolina editor. And just then and there he probably got the surprise of a lifetime, for he was promptly, though withal politely, told to mind his own business and South Carolina would attend to the things which belonged to *its* business; and further, that, in the opinion of the South Carolina editor, a very large number of so-called medical journals represented in the Medical Editors' (?) Association were "no better than they should be" and that it would be an undisguised blessing when they ceased to exist for revenue only and for predatory spoliation. But, good Mr. South Carolina Editor, what could you expect? The "independent" (of morals and self respect) medical (?) journals of this enlightened land do not like state organization journals; they do not like to see the truth even whispered about; they do not at all like to see an organized medical profession coming into its own and demanding recognition. There is a peculiar and penetratingly unpleasant odor which arises from the American Medical Editors' (?) Association and, as you have discovered, it is irritating to the nostrils of an honest man. Too bad; another illusion gone!

PERNICIOUS PRACTICES.

Sollmann, in a recent article in the *Journal A. M. A.*, has called attention to the process of mental degeneration which is begun almost as soon as the medical graduate enters some hospital immediately after his graduation. In almost all, if not all, hospitals, various professors have the pernicious habit of saving a little time and trouble for themselves by using stock formulas and prescriptions for various conditions which they encounter in the patients in their service. These ready-to-wear mixtures are prescribed by number and the patient is supposed to fit them, instead of a prescription being written to fit the patient. Thus the young physician, in the very beginning of his professional work, is instructed in the bad practice of using a fixed or proprietary mixture which is ordered by name or by number—generally the latter. Quite naturally, later in life when he has begun the practice of medicine for himself, he follows the illustrious (?) example set him by his hospital chiefs, and instead of making his medicine fit the patient, he turns to the stock mixture (and manufacturers will furnish innumerable such, with unlimited powers and impossible qualities) and becomes the unthinking user of "ready-to-wear" medicines. If they happen, through some lucky chance, to fit the patient, the patient may be thankful; if they do not—and how often can they?—why then the patient will have to adapt himself to the medicine as best he can. How perfectly grotesque! To distort and debase the practice of medicine at its very inception!

THE STIMULANTS USED IN COOKING.*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

The table as a piece of furniture should be held in great esteem. By turns it is loaded with learned books and succulent meats, which serve for nourishment for mind and body. No one who loves his fellow-man wishes to see the pleasures of the table curtailed, for it is here that some of the most delightful intercourse of human beings takes place. As Rudyard Kipling puts it, we can here praise Allah, who has not terminated the delights nor separated the companions. While conversation is the chief pleasurable feature at table, yet the general surroundings and the manner of preparing and serving the food are all contributory to the charm of a convivial gathering.

But good and evil are born at a whelping, and while the table brings us much good, it also brings us much evil. Remonstrance is especially needed against the misuse of spices and pepper. In preparing food, seasoning is important, and when delicately done adds much to our pleasure. Take salt, for instance, of which it is said it is something that being left out makes food taste bad. No matter how carefully the cooking is done, if salt is omitted, the dish will taste flat. The ancients considered salt so necessary a seasoning in all cooking, and held it in such favor that metaphorically they applied the term salt to the witty sayings that give zest to conversation. Stimulating drugs, such as pepper, are added to food either to stir up a jaded appetite, or to take away the flat taste, or to vary the monotony of diet.

It would seem impossible in any of our large cities for a person with a fair digestive system, and moderately well supplied with money, to suffer from monotony of diet. If, after being shown the long list of different good things to eat, one were told that many people live exclusively on bread, meat, potatoes and sugar, with coffee, whisky and pepper, one would be surprised. Nevertheless such is the case. With us this state of affairs would seem especially strange, with a bay and river system that is richer in food than Delaware Bay, and surrounded by the most fertile valleys the world possesses.

The character of our population, too, should prevent sameness in eating. The southern European with his liking for garnishes and vegetables should correct the heavy, monotonous menu of the Anglo-Saxon. The German Israelites are good eaters, and bring us many fine dishes. The Italian market gardeners furnish us with a number of vegetabdes that in the eastern states are high priced novelties, and the proprietors of Italian vegetable stalls know many a secret of good cooking, especially in the way of soups and salads. In California, therefore, there is no excuse for the deadly round of bread, meat and potatoes that is the curse of the middle and Eastern states.

Our very early ancestors, like the other carnivorous animals, ate their food as they killed it, while it still had its warmth, and before the myosine had set. The meat was therefore warm and tender. We have learned to keep meat until the myosine again liquefies, and we cook it to restore the volatility of the flavors. In a savage state man's food consists of so few articles, and the cooking is so badly done, that the longing for new sensations to the palate must become intense. The demand for strong spices and alcohols becomes a passion that civilized peoples hardly realize, as, for instance, among Indians, who will drink a diarrhea mixture loaded with Cayenne pepper as a beverage. In this view one can get the attitude of the barbarians toward ancient Rome and can understand why Alaric, on conquering the Eternal City, demanded an annual contribution of pepper. It is said that the Huns in order to make their meat tender would ride on it all day. Between the odors acquired from the rider and from the horse such a piece of meat would go down better for a liberal peppering.

The active overland trade between the Orient and Europe was in spices and other drugs that contained great value in small bulk. It was this Oriental trade that made the commercial predominance of every empire from the Babylonian, down through the Assyrian, Greek, Alexandrian and Roman to the Venetian. It was the spice trade and the desire to reach the Orient by sea to conveniently get at these condiments, that led to the discovery of America and to the rounding of the Cape of Good Hope. Then came the commercial rise of Portugal, Holland and England, and now this Oriental trade has begun to build up the west coast of the United States and San Francisco. The fundamental reason for all this striving is that spices give the human being pleasure, and for pleasure he is willing to go any length, and to endure all hardships, even those of ill health.

In Nurenberg they keep the old home of Albrecht Durer as a revered monument, and it is furnished as nearly as possible in the way it was in the lifetime of the artist. The kitchen is small, and inconvenient. The cooking utensils are few, unhandy and clumsily made, and the stove is a primitive inconvenient affair. No wonder Albrecht died of intestinal cancer, seeing the kind of food his bowels must have been given to elaborate as nourishment for his august brain. As I looked at the kitchen outfit I saw the material evidence of poor cooking, with its natural consequence of longing for pepper and overseasoning, necessitating in its turn the long, expensive, risky camel-freight across the Mesopotamian deserts, through a country controlled by the stupid Turk. The obtuseness of the Turk in commercial matters is proverbial, and he barred the way. No wonder America was discovered, and it was particularly fitting that a lady should give her jewelry to have the matter brought about. The whole of Rabelais, that incarnation of the Middle Ages, who lived in the time of Isabella, is one long expression of the desire to relieve the flatness of ill-cooked food by means of vinegar, salt, mustard,

*Read before the Sacramento Society for Medical Improvement, March 17, 1908

pepper, and by the smoking and salting of meats. These foods were to be washed down with great quantities of strong drink, on the principle never to spare liquor to those that are at hot work.

In the memory of those now living, the people of the United States were rural. Even the urban populations were countrified in life and thought. It is only of recent years that commerce has so developed as to change the life of the nation. In a rural population the food is bread, meat and potaties, and nothing else; and the castor is always on the table. Pork is about the only meat used, and it is frequently badly cured. We all of us remember the rusty pork of the farm houses. The bad quality of the meat on the farms leads to the consumption of large quantities of starchy foods, as breads, pies, cakes, and heavy pastries. As sugar grew cheaper it also came more into use. This heavy food, while men were working in the open air on the farm, was usually well assimilated. But as commercial life developed and people got indoor and more sedentary occupations, such concentrated diet acted more and more disastrously on the digestive organs. The combination of heavy feeding with sedentary habits is especially fatal to those that by nature are endowed with a particularly fine digestion. This is one of the most interesting chapters in the hygiene of nutrition, and is best illustrated by a concrete example:

A man past forty-five years of age had a very active occupation before the great fire in San Francisco. He liked good eating, and especially peppery dishes, and also took many drinks of Scotch whisky throughout the day. His elimination was excellent, and pleasure not pain was his portion. After the fire the natural slowing down of elimination at his time of life was accentuated by a sedentary occupation. Burke has said that there are two things we must guard against as we grow older, the pleasures of the table, and a love for accumulating money. This aphorism held true of my man. The quantity of food consumed did not decrease, but the elimination did. The superfluity had to break out somewhere. His face became more full and florid, and its natural wrinkles disappeared, giving him a fictitiously robust appearance. He acquired a catarrhal affection of the bronchial tubes, and a constant cough and clearing of the throat, that is called by the Spanish, "La tos de richos," the cough of the rich. Rheumatic swelling of some of the finger joints and rheumatic pains arose, and intensely itchy patches of papular eczema appeared. These were the first symptoms of degeneration, which were bound to augment. Is any one so foolishly optimistic as to suppose that this man will cease whipping up his digestive organs with alcohol and pepper? On the contrary, with the increase of his misery, the use of stimulants will tend to increase. That in the long run such excitation does not ameliorate but rather tends to drive one farther into trouble, the ordinary man does not know, or knowing does not heed. It is the observation of such cases that makes me regard the beginning of the fifties as a particularly critical time of life, the dangers of which may be accentuated by many fortuitous circumstances. For instance, in one of Guy de Maupassant's stories the author depicts a character as a man with a most vigorous digestive system, forced into physical inactivity by having had his feet shot off in the Franco-Prussian war. The author describes him as getting himself into a railway carriage. De Maupassant says, "He was perhaps fifty-three years of age, but his hair was already nearly white. He had a bristling moustache, and was very fat and heavy bodied, as strong, active people tend to become when forced into inactivity. He mopped his forehead, and breathing hard, inquired if I should be incommoded by his smoking."

You have here an artistic picture of the aspect of the kind of man I have in mind. He would naturally from the state of his nutrition have seborrhea, and consequently his hair would become by fifty not only gray but white. Being naturally robust he had stout hair, especially in the moustache. As a cripple he had become fat from inaction, which made him puff and perspire when in motion. There was also a catarrh of the upper respiratory passages, and the discomfort of short breathing was relieved by smoking. We have all of us often seen such people hurriedly fumble for their tobacco.

Anatole France also gives a good description of this class of man: "Notwithstanding his gray hair he seemed to be in the full strength of his years. He had a smiling mouth and lively eyes, and the folds of his chin descended majestically down over his stock, that through sympathy had become greasy as the neck that spread over it."

Such men are not ascetics. They enjoy eating, and are apt to be devoted to highly spiced foods. They suffer from all sorts of ailments incident to their mode of life, such as rheumatism, gout, stone in the bladder, biliary calculi, and many irritating eruptions of the skin. At the same time they often are men of immense physical force, and are among the best positive workers in the world. They have a shorter life than nature intended, and may be said to literally dig their grave with their teeth. These vigorous individuals eat until they get that sense of fullness and repletion that comes from taking in a large bulk of food. They sometimes say that the long drawn out dinner or many courses is the only one that gives them entire satisfaction. Their vigorous digestive system enables them to turn this mass of food into nutritious juices that have to be disposed of either as units of work or as excreta, or as fat. As these men grow fatter their capacity for work is lowered, but their voraciousness in eating continues. It is not infrequent for them to have spells of depression and melancholy which they try to escape by drinking. While drunk they do not eat, and after such an enforced fast they crawl out as limp as a rag, but feeling infinitely better mentally. Besides going on a spree they have another natural remedy, an attack of gout, in which their physician puts them on a low diet, and a course of purgatives and alkalies. Such great, fat, pulpy in-

dividuals form excellent meat for microbes, and if the bursting of an overfull blood vessel does not kill them, pneumonia may, and in any event when once attacked by one of the great maladies their exit is apt to be rapid.

The flat taste of food is usually due to overcooking or bad salting. The flavors of food are the soluble substances that touch the palate, and the odors that please the sense of smell. A good example in this kind was given in the late Spanish war. The army before Santiago was supplied with canned roast beef, which proved meat out of which the soluble, natural flavors had been taken to make beef extracts: the capitalists' idea of killing two birds with one stone. In that warm climate where meat is not very well tolerated at best, this canned roast beef was nauseating. In such a case a large quantity of pepper would have made it more palatable, but not more wholesome.

One of the secrets of cooking is not to allow the escape of these savors, and if they escape, and if the odor of the cooking is throughout the house one may expect a tasteless dinner, for the bouquet of the food is in the atmosphere and not in the viands. A cauliflower, for instance, that is cooked for ten or fifteen minutes over a quick fire in well salted water, will be firm and stand up in the dish, and will have a well defined agreeable taste, whereas if longer and more slowly cooked it will fall into a shapeless flat-tasting mush, requiring pepper to whip it into line for the table.

Many people take stimulants to increase appetite. This at times is beneficial, and is one of the most frequent therapeutic measures to bring about a balance of health. Sometimes the vital forces seem to slow down, and the individual "fails," as we say, from no ascertainable cause. Under such circumstances a stimulant of any kind may be of service. It may be a course of the mineral acids, it may be travel, it may be a greater variety of food. In whatever form it comes it whips up the vital forces that were insensibly slowing down, and does good. A discreet amount of stimulation is often therefore as grateful to the body as a fertilizer is to a plant. Stimulation may, however, like all good things, be carried to excess. Many people so copiously pepper their food that they fall directly into the monotony of diet from which they desire to escape. Their taste becomes so vitiated that the only flavor they appreciate is pepper, or something equally strong.

Many diseases are detrimentally affected by the ingestion of pepper. Rosacea is an excellent example of a disease that reacts unfavorably to the ingestion of pepper or alcoholic stimulants. Many patients will tell you that a glass of wine will set their face in a blaze.

Erythematous eczema of the face is another good example. In this disease the relationship between functional disturbances of the gastro-intestinal tract and the skin affection is often most marked. I refer here to the type depicted in Louis A. Duhring's Atlas of Skin Diseases, where the skin is red and desquamating, and the natural lines of the skin are accentuated. The eyes are sad and tired looking, as if from lack of sleep, and the corners of the mouth drawn down, giving the man the appearance of invincible melancholy. If at all observant it is likely that this person has found that indulgence in peppers, spices, alcohols, and the strong nerve stimulants, such as tea and coffee, are followed by an attack of cutaneous irritation.

Not long ago a young man applied to me for the relief of a tantalizing pruritus. I had long previously treated the father for a severe papular eczema of the face. This was not the sole trouble the father had, for he was highly nervous, had a florid face, and was addicted to drink. The son was of the same tense, high strung type as the father, and his belly had two large scars on it resulting from an operation for appendicitis. The fact of appendicitis was itself a sign of intestinal irritation, inflammation of the appendix being only the highly dangerous part of a much more extensive catarrhal inflammation of the bowels, just as mastoiditis is the highly dangerous point in a catarrhal affection of the ear. By taking out the appendix, however, the catarrhal trouble in the rest of the intestines is not cured. My hypothesis therefore was that the pruritus was due to intestinal irritation and that possibly the predisposition to it was inherited, and he was treated accordingly. Among other things he was set on a diet in which pepper was interdicted. Shortly afterwards he returned, saying that for some time he had been better, but that the preceding Sunday night he had had a severe attack of itching which had prevented sleep. On questioning him he admitted eating curry that evening for dinner, and affirmed that he did not know that curry is pepper. It may be that curry did not cause the attack of itching, but its ingestion occurred at the right time for it to have had this effect. This unperceived enjoyment of pepper and other condiments should always be borne in mind in ascertaining the habits or directing the diet of even amenable patients. In the first place people are not used to thinking along these lines. I remember one time speaking very earnestly to a thoughtful woman on the evil effects of pepper as particularly emphasized in a member of her family. The day following this conversation I lunched in her household, and we had sausages loaded with pepper. Then again many dishes contain pepper so artfully masked as usually to escape detection. An intelligent man suffered exquisitely from neurotic eczema, and I had repeatedly told him in a general way to abstain from pepper. On one of his visits I handed him a list of dishes apt to be highly peppered. On reading it he remarked reflectively that he had just eaten chowder in a restaurant. Patients should also be told to beware of purees or thick soups, as such dishes, that otherwise taste flat, have often pepper added to them to impart a warm full taste, agreeable to the palate. While delightful to the palate, and warm and comforting to the stomach, farther down the alimentary canal they may set every one

of the valvulæ conniventes, or winking valves, violently blinking.

I know of no better demonstration of what an eczema patient should not eat, than a good free lunch counter. You there see savory Spanish stews, stuffed peppers, strong cheese, baked beans loaded with pepper, well spiced sausages and pickles. There will also be salt meats, and many foods impregnated with vinegar. The point of view of the proprietor of a free lunch counter is well illustrated by the following story from Rabelais:

A prince wishing to conquer a king in whose country he had landed, sent him a box containing a very hot confection. The king partook of these condiments, and straightway his mouth began to burn. To allay his thirst his attendants put a funnel into his mouth and poured down a cask of wine. The courtiers seeing the king with such a magnificent thirst, also partook of the confection, and as a consequence drank copiously, and soon became drunk. The common people seeing their king and nobles all dead drunk, thought it the usual preparation for battle, and got drunk too. The inebriated town was attacked at the psychological moment, or rather at the unpsychological moment, as the inhabitants were unconscious, and readily fell a prey to the enterprising prince who devised the scheme.

The following is a list of some peppery foods and condiments which should be avoided by those sensitive to the drug:

Black pepper.
White pepper.
Red pepper.
Paprika.
Ground chili.
Curry powder.
Pepper sauce.
Chili sauce.
Tobasco sauce.
Worcestershire sauce.
Catsup.
Chow-chow.
Most varieties of pickles.
Mustard through all its forms; mayonnaise, for instance, is equivalent to a pepper.
Purees.
Welsh rabbit.
Most Hungarian dishes.
All Spanish dishes, as tamales and enchiladas.
All dishes a la Newburg.
Many escalloped dishes.
Sausages of all varieties.
Dressing of fowls.
Stews and hashes may contain pepper.
Salads are apt to be full of pepper.
Chowder, eaten in a restaurant.
Canned tomatoes with red pepper.
Baked beans with tomato sauce.
Oyster cocktails.
Hashed potatoes are usually full of pepper.
Ginger and cloves.
Chutney sauce.
Pepper is a favorite method of hiding over-cooking, and is so used by many cooks. If a cook has the "pepper habit," brown some cornstarch, take most of the pepper out of the pepper box, and add the browned cornstarch. These lazy cooks seldom taste their dishes in the preparing, and the ruse escapes detection.

From what I know of human nature, I am of the opinion that the reading of the above list will rather serve as an incentive to eating pepper than as a deterrent.

It should always be borne in mind that pepper is a drug, and a very irritating stimulant one at that. It is a drug that is taken for fun, and one must be always on one's guard about things taken for sport. It is a wise rule not to try to get too much fun out of any drug. Men who try to do so, usually find their path to lead straight to a physician's office, and it is an old saying that, "He who dwells with doctors dwells in misery."

REMOVAL OF TONSILS UNDER LOCAL ANESTHESIA.*

By E. C. SEWALL, M. D., San Francisco

I shall not go into the indications for the removal of the tonsil. It is a broad subject and one pretty well thrashed over. All are, however, pretty well agreed that, when the indications are such as to demand the removal, the offending body should be extirpated in its entirety. This paper concerns itself only with the operative technic. For the sake of clearness a few anatomical facts must be mentioned.

The tonsils are a part of what Waldeyer has called the adenoid ring. We have them lying on each side of the pharynx; isolated masses of adenoid tissue whose function we do not know. Lymphoid follicles are found scattered among the lymphoid tissue. Opening into the pharynx are the furrows or clefts called crypts, lined with stratified pavement epithelium and often containing degenerated epithelium, leukocytes and lymphacytes. The tonsil lies in a cul de sac formed by the palatoglossus in front, called the anterior pillar of the pharynx, and the palatopharyngeus behind, known as the posterior pillar. Above the tonsil, there is left a space called the supra-tonsillar fossa. This is covered by a fold of mucus membrane called the plica triangularis. Externally the tonsil is limited by a fibrous capsule which lies in relation to the superior constrictor of the pharynx. The superior constrictor then forms the outer wall of the containing cavity. As can be seen in the specimens presented, this limiting membrane covers in the smooth rounded tonsillar substance. The pillars are sometimes distinct and free from the tonsil, but often are grown fast to it. Again, we find tonsils of large size completely hidden under the anterior pillar, their presence shown by the bulging of the part when the patient swallows or felt by the examining finger.

The arteries supplying the tonsils are the dorsalis

*Read before the Cooper College Science Club.

lingue from the lingual, the ascending palatine and tonsillar from the facial; both being separated from the tonsil by the superior constrictor, ascending pharyngeal from the external carotid; the descending palatine branch of internal maxillary and a twig of small meningeal. The internal carotid lies behind and to the outer side of the tonsil, nearly an inch distant from it.

The lymphatics are of importance, a close plexus of lymphatic vessels surrounds each follicle from these plexus, the lymphatic vessels pass to the submaxillary lymph glands below the angle of the jaw. From the sub-maxillary glands, the lymph passes to the deep cervical glands.

The consideration of the removal of tonsils has received a great deal of attention in recent literature. The methods of the past have not proved satisfactory except in a certain class of cases, i. e., those in which the tonsil was pendulous and easily removed. The instrument most commonly used was some form of guillotine and we must give credit that with this instrument the tonsils were very quickly extirpated without an anesthetic usually, and with but little discomfort or danger to the patient. However, in such cases even we have a method preferable to the use of the guillotine and one which we can apply with almost the same ease and with greater safety to the patient. I refer to the use of the cold wire snare, of the advantages of which I will speak later.

There are patients, however, and they form according to my experience by far the larger proportion, in which the tonsils are so intimately connected with the pillars of the pharynx that this removal by the guillotine alone can only be an incomplete one. It is this class of cases that has led to dissatisfaction with former methods. We are trying to remove a mass which is firmly attached not only externally, but in front and behind to the surrounding soft parts. The anterior pillar lies over it anteriorally. Perhaps only a very little of the tonsil shows beyond its edge. The pillar is grown fast to the tonsil and must be separated from it, as also must the posterior, before we can properly remove it.

This constitutes all that is difficult in the operation. The act of removing the tonsil once it is freed from the pillars is easy. The separation of the pillars takes some time and no little dexterity, and consequently has lead to the employment of general anesthesia. The pendulum has swung so far now that in this country tonsils are removed very largely under general anesthesia. One easily gets the general anesthesia habit. It is so much easier for the operator, and thus general anesthesia becomes the routine in tonsil removal.

Now, in the free lying tonsils, its employment is quite unnecessary, except in cases where we deem it wise on account of the personal equation and even in these buried tonsils of the most exaggerated description I have found that the employment of a general anesthetic is rarely necessary.

Where removal is indicated, the tonsil must be extirpated in its entirety; if impossible otherwise, then under a general anesthetic. But I have found in most cases that by employing a local anesthetic by the injection-infiltration method, the tonsils can be separated from the pillar and removed. The patient suffers some pain surely, and one must be a judge of the disposition of a child for whom one had better employ general anesthesia. I have recently operated upon twenty-seven patients under local anesthetic. In some of these cases the tonsils were more or less free and the work was as quickly done, nearly, as with a guillotine. In many, however, the tonsils were buried under the pillars and in one particularly, a girl of 11 years who had undergone repeated lancings for recurring peritonsillar abscesses, the tonsil was lost under the anterior pillar and was fastened to the soft parts by the firmest cicatrical bands. The work requires tact on the part of the operator. The patient must be kept constantly in hand during the work. They often cry, largely from nervousness, and there is considerable pain connected with the whole procedure. Patients stand it very well as a rule, however. Two of my patients were only five years of age. One of these little ones I show this evening. His tonsils were removed one at a time with interval of a few weeks between. If the pain had been very terrifying I doubt if he would have returned for the second operation. I usually endeavor to get both tonsils at one sitting, but this is not always advisable. The majority of the patients were under ten years of age.

The technic is as follows: I first paint the anterior pillar with 20% cocain. This is used very sparingly merely to prevent pain from the needle. Next a puncture is made with an ordinary hypodermic syringe in the anterior pillar and a considerable quantity of the anesthetic used, well diluted, is injected. Many punctures are made, and one or two deep toward the base of the tonsil. In the work at first I used cocain and would inject gr. 1-12 combined with 1-1200 adrenalin. In the last eight cases, however, I have used eucaine because of fear of cocain, although I never saw any untoward symptoms from its use. Of the eucaine, which the pharmacopeia says may be used ad. lib. in 1% solution, I use one dram and inject in many places. I have also used normal salt solution in one case, practically walled the tonsil off in a large amount of it. The patient did not suffer much pain. I immediately, on finishing the injection, pick up the anterior pillar with a blunt pointed tonsil knife. The pillar is thus separated from the tonsil, and there is no danger of going through the constrictor where the vessel lies, because the knife has a probe point and also is always in view through the semi-transparent pillar. After bringing out the probe point the cut is finished by a ripping movement. There is thus no blind separation. The tonsil is now grasped by the forcep, pynchons, to which I have added a hasp to hold them when once they catch the tonsil. The tonsil is drawn forward so the attachments of the posterior pillar are better seen. These are separated as were the an-

terior attachments. We now draw the tonsil outward and being sure that it is free except at the base, slip the cold wire snare over the straight handle of the forcep and the stiff piano wire encircles the tonsil. A turn of the windlass and the tonsil is out.

There has been no cutting, and if the separation has been properly done, the tonsil is entire. The cold wire of considerable size has constricted the vessels instead of cutting them, and consequently the danger from hemmorrhage is much lessened. It is superior to any cutting instrument also because once it is beyond the greater curvature of the tonsil, instead of cutting at that point it works its way toward the point of least resistance, the base, and removes the part entire.

The snare I show was made under my direction by Tieman & Co., and is strong, simple and quickly handled.

Discussion.

Dr. Barkan: Up to a few years ago I was doing this work and had done it for many years. So far as the faucial tonsils are concerned I used the guillotine almost exclusively, and I did not have as much trouble as Dr. Sewall would indicate with regard to the fair ablation of the hypertrophied tonsil and the arches being often adherent. While recurrence occurred occasionally, it was not so in a large percentage of cases. All in all, considering the fact that we never used the general anesthetic at that time, accidents occurred rarely, and both patients and physicians were satisfied with the results. Sometimes after removal of faucial tonsils these cases looked very ugly and infected surfaces presented themselves. The patient had fever for a day or two, but with the usual treatment for such cases the patient tided over this little period and made a fair recovery. So far as my impression goes, I would say that in the removal of tonsils the surgical principle is the correct one, that a tonsil giving rise to repeated disease might be and should be enucleated. My objection has been and is still to doing this work under a general anesthetic. It seems to me quite unnecessary that risks should be taken, considering the slightness of the therapeutic result and the smallness of the organ to be removed. I have made up my mind that this method will not prevail for a very long time, but that as Dr. Sewall is now doing, a safe method of enucleating faucial tonsils under local anesthesia is going to prevail.

PERIPHERAL ENDARTERITIS.*

By G. B. N. CLOW, M. D., Oakland.

I desire to present to the members of this Society the report of a case in which a diagnosis of Rayraud's disease was made.

P. J. Skelton, by occupation a carpenter, aged 25 years, height 5 feet 6 inches, normal weight 144 pounds, well nourished and strong; one of a family of fourteen children, ten of whom are living. Two sisters died in infancy and two brothers at the age of 25 and 26, of tuberculosis. His father is 56 years of age and enjoying good health, excepting eczema of forehead. Mother is 55, health good.

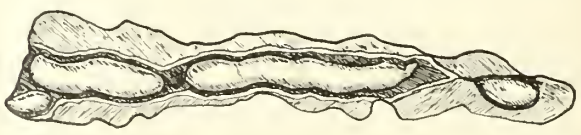
About two years ago, a sister 28 years old began to have trouble with her fingers, the matrix becoming inflamed and swollen, the application of water making them more sore and, patient says, seemed to set them on fire. She went to the hospital and had the nails of three fingers of the right hand and the nail of the ring finger of the left hand removed. Her recovery was satisfactory. Later the nail of the index finger of the right hand became involved, requiring removal. This was done January 1, 1908; the result is not satisfactory and she expects to lose the finger.

Mr. Skelton came under my care December 26, 1907. He complained of severe pain of right hand, from which he was unable to obtain any relief. The disease first made its appearance three years ago, when he noticed that when his fingers were exposed to cold they would become white, numb and cold, the pallor continuing for an hour or so, then they gradually became hot, feverish and red. After the reaction the fingers became normal. These attacks became more frequent, the abnormal condition grew stronger and finally permanent. For three months the patient had been unable to follow his occupation and suffered severe pains, from which he could obtain no relief, night or day. The pain was worse at night and in the recumbent position. The fingers were pale, cold and bloodless most of the time; upon the pulp of the index and middle fingers was a gangrenous spot the size of a ten-cent piece, another on the second phalanx of the index finger. There was no pulse at the wrist or forearm. No pulsation could be felt until the upper part of the brachial artery was reached—the sensation and motion of the hand and arm were normal—the fingertips were hyper-sensitive and the median and radial nerves were sensitive to pressure.

The urine was found normal by examination. The blood was examined three times, with the following result:

Red blood cells	4,000,000 to 5,000,000
White blood cells	10,000 to 15,000
Hemoglobin	80
Polynuclear	79
Large mononuclar	7
Lymphocytes	13

The history and progress of this case undoubtedly points to Raynaud's disease. The pathological condition of the arteries of the hand, forearm and arm prove it to be a case of "peripheral endarteritis." The etiology of this remarkable disease is still obscure. Syphillis, gout, malaria, exposure to cold, long-continued use of alcohol or tobacco are predisposing causes. Malaria and Raynaud's disease are frequently associated. The disease is progressive, advancing from the periphery toward the trunk, the artery being gradually destroyed until a fibrous cord is left. Amputation does not always relieve the trouble, the process may continue in the stump—a peripheral thrombus appears lining the walls of the intima; this is often channeled and the blood finds its way through and as the disease progresses the vessel is finally closed. The thrombus is of the layer variety, such as occurs in aneurism. At first it is easily detached, but soon becomes adherent.



It is often several inches in length and the channel can be demonstrated for its entire length until it becomes closed. The arteries diminish in size, their coats becoming thinner and as the process advances, fibrous. No calcareous deposit takes place. A similar change may take place in the veins, usually

* Read before the Alameda County Medical Society.

commencing later; also the nerves may undergo some change. Raynaud suggested that the local syncope was produced by vascular spasm, the asphyxia being dependent upon dilation of the capillaries and small veins and spasm of the smaller arteries. The relation between arteries and infection is no new discovery. The blood current carrying infection to the walls of the blood-vessel, this is not phenomenal when we see even the dense structure of the teeth assailed and destroyed by deleterious or germ-carrying fluids, and although at present we do not fully understand the exact nature of such pathological processes, I believe the time will come when we will know why these changes take place in the tissues of the body.

Treatment.—The first desideratum was the relief of pain. One quarter of a grain of heroin was given hypodermatically as often as required. This was gradually increased until 7-12 of a grain was given, and even these large doses did not afford relief. Quinine and iron were given internally—iodopin and salicytate of hydrargyrum hypodermatically, also nitroglycerine was given to the limit of toleration, 1-100 of a grain every hour. This remedy seemed to be of some value for a short time, but in spite of our strenuous efforts, the pain in the hand became more severe, the passive congestion more pronounced, the coldness and numbness more marked, the gangrenous spot enlarged, the patient lost his appetite and was fast losing strength. After consultation with Doctors Riggin and Fischer it was decided the patient must have relief, and it was necessary to sacrifice the arm. We did not deem it advisable to wait until nature did the amputation, or the patient became a slave to the drug habit, his vitality sapped and his resistance gone.

On January 15th, the arm was amputated at the upper third, about 7 or 8 inches from the shoulder. An attempt was made to save a portion of the forearm; the old flap operation was performed and it was found that the blood vessels had become fibrous cords, consequently no hemorrhage took place. Although no tourniquet had been applied to the arm, the circular operation was made just below the elbow joint with the same result. We did not desire to sacrifice any part of the arm unnecessarily, nor did we wish to take the chances of the disease appearing in the stump, so the amputation was made at that point where the blood vessels were normal. The night after the operation the patient slept all night, the first night's sleep in three months. He was out of his bed in four days and made an excellent recovery.

THE STATUS LYMPHATICUS, WITH PARTICULAR REFERENCE TO ANESTHESIA IN TONSIL AND ADENOID OPERATIONS.*

W. HUMES ROBERTS, M. D., Pasadena.

In and about Los Angeles, so many deaths have recently occurred under general anesthesia, either during, or immediately following minor operations, such as the removal of tonsils and adenoids, that it seems advisable to look into the subject to see if such sad occurrences can be prevented in the future. The subject of deaths from anesthetics has been thoroughly gone into in the past, and, by most investigators, it has been ascribed to a condition existing in the patient which has been termed the "status lymphaticus" or the "lymphatic constitution." I make no claims for originality for what I am about to present, but I simply wish to set forth some well established facts, in connection with the status lymphaticus, with the hope of thus refreshing the minds of all present, in order that we may be placed more thoroughly on our guard, and that we may thus prevent deaths which are bound to occur if anesthetics are to be used as indiscriminately in the future as they have been in the past. Few physicians are capable of giving an anesthetic, and no one without medical training should *ever* give one. Nothing is more erroneous than the idea that any one can give an anesthetic. Doubtless many deaths under anesthetics have been caused by gross or almost criminal carelessness.

This paper is to deal solely with those cases in which death has occurred when the anesthetic has been carefully administered by a proper anethetist, and in which, in all probability, the status lymphaticus existed, as is shown in the report of one autopsy. In nearly all cases in which the status lymphaticus has been demonstrated at autopsy, enlargement of the thymus gland has been found. This enlargement, associated with the sudden death, was first mentioned by Bichat in 1723, but the connection was then apparently overlooked until 1829, when Copp called attention to it. Little notice was paid to it until 1888, when Jacobi, in this country, and Grawitz, in Germany, took it up.

In 1889 Paltauf of the Vienna school wrote, "Hyperplasia of the thymus is physiologically, as well as anatomically, an element of a general hyperplasia, and is a result of a derangement of nutrition or metabolism which also causes a degeneration of the cardiac centers." He found at autopsy, in addition to enlargement of the thymus, a hyperplasia of the entire lymphatic apparatus; enlarged nodes all over the body, of faucial and lingual tonsils, of the intestinal follicles; enlargement of the spleen and hypertrophy of its follicles; changes in the circulatory system. Here he noted a true hypoplasia: the aorta and small arteries were smaller and thinner than normal, and there were signs of cardiac dilatation.

Kolisko,[1] who averages some 2,000 autopsies each year, with about six of these dying from cardiac paralysis due to chloroform, says, "In these cases we always find the condition known as the 'habitus lymphaticus.' The nature of this condition is (1) a persistent thymus gland, which has often become considerably enlarged through an increase of its lymphatic tissue; (2) enlarged lymph glands; (3) adenoid vegetations in the pharynx, enlarged follicles at the root of the tongue and in the pharynx; (4) enlarged follicles in the intestines and stomach. These conditions are accompanied by acute dilatation of the heart, with no changes in the muscles or endocardium; or occasionally there is evidence of a previous cardiac dilatation, marked by the thickening in the endocardium, but not recognized clinically. There is also very frequently found a hypoplastic condition of the arterial system."

*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

Is it possible to recognize the status lymphaticus prior to the beginning of symptoms which generally terminate in death? Many physicians, especially those of the Vienna school, claim that it is in some cases. Blumer,[2] quoting from Escderick, who is one of the foremost authorities, says, "The subjects of the status lymphaticus usually have a pale thin skin, a pasty complexion, and a good pad of subcutaneous fat. Frequently signs of rachitis or scrofula are present. The superficial lymph glands, especially those of the neck and axilla, are enlarged. There is hypertrophy of the tonsils, the circumvallate papillæ of the tongue, and the pharyngeal lymphatic apparatus (adenoids). The spleen is often palpable." There may be faulty development of the sexual organs, a thymus capable of percussion, and an increase of the lymphocytes in the blood. We should be very suspicious, if, in addition to the foregoing, we obtain in children a history of dyspnea and laryngismus stridulus, and in adults a history of fainting attacks. It should also be kept in mind that rachitis and goitre are often associated with the status lymphaticus. It would seem reasonable to suppose in this connection that the status lymphaticus is probably the cause of the frequent deaths occurring after operation for goitre. It is thus seen that hypertrophy of the faucial and pharyngeal tonsils are among the symptoms found in the status lymphaticus. We must remove these enlarged glands, when of sufficient size to interfere with the growth and development of the patient, with the least possible risk and shock.

Blumer[2] says, "Individuals who are subjects of the status lymphaticus are born with an instability of the mechanism regulating the so-called 'horror autoxicus,' at any rate, so far as the lymphatic apparatus is concerned, so that they are subject to intermittent attacks of lymphotoxemia, which may lead to reflex nervous phenomenon of various kinds, or may cause death from cardiac paralysis. During the attacks of lymphotoxemia such individuals are especially susceptible to the action of the bacterial or chemical poisons, and also to physical and psychical shocks, which at these times may cause their death under circumstances which would be trival to a normal individual." This would explain the deaths which have occurred following the injection of remedial agents, as in the well known case of Prof. Langerhans' son, who died soon after receiving diphtheria antitoxin hypodermically. This would also explain deaths following shocks, frights, trivial injuries, or after diving into cold water.

Blumer,[2] in concluding his comprehensive paper on the status lymphaticus, says: "(1) The condition known as the status lymphaticus is a definite pathological entity. (2) It is probably associated with, if not due to, a condition of intermittent lymphotoxemia. (3) It may be associated with sudden death; probably, as a result of lymphotoxemia alone in some cases, or as a result of the action of toxic, physical, or psychic injuries which are rendered much more powerful than usual by the predisposing action of the lymphotoxemia.[4] In some cases the sudden death is undoubtedly mechanical and due to asphyxia from pressure of the enlarged thymus on the trachea."

Olmacher[3] says that many deaths from status lymphaticus are due to increase of intra-cranial pressure with sudden edema, the clinical picture depending on the site of the edema, and the resulting pressure. If the external surface of the cerebrum is involved, various convulsions of the motor apparatus occur; if the floor of the fourth ventricle, sudden cardiac or respiratory failure.

Most surgeons admit that to remove tonsils and adenoids properly, general anesthesia is necessary. What anesthetic is safest? Halsted,[4] in an able paper read before the Laryngological, Rhinological and Otological Society at its general meeting in Philadelphia, 1900, showed clearly the necessity of performing the adenoid operation on children under some sort of a general anesthetic, in order to avoid the great shock to the child's nervous system, which would occur where no anesthetic is used, or when only cocaine is used locally. In addition to the fact that this operation cannot be thoroughly performed unless the child is unconscious, the shock would be sufficient to cause the death of any patient with the status lymphaticus, and this should condemn it. Halsted points out the great danger of giving chloroform to any child with adenoids or enlarged tonsils, whether being operated upon for them or for something else. The lymphatic tendency is most marked in children before puberty, and it is during this time that chloroform is particularly unsafe. The saying that chloroform is the best anesthetic for children is amply refuted by statistics. Chloroform is a decided depressant, and, when with children, there is added fright with violent struggling against the anesthetic, we have a combination that can readily bring on cardiac syncope in a patient often predisposed to it by the status lymphaticus. This complex is undoubtedly the cause of so many deaths under chloroform before operation is begun.

Sanford[5] has reported a death following the removal of adenoids under cocaine. Were cocaine more generally used many deaths would undoubtedly occur, as young children are quite susceptible to its toxic effects.

Dr. W. J. McCardie,[6] in a recent article, reports thirty deaths from anesthesia in which the status lymphaticus was demonstrated. These occurred as follows:

Following chloroform	17
Following ether	6
Following chloroform and ether	5
Following nitrous oxide	2
Following ethyl chloride	0
Total	30

Thus, in twenty-two out of the thirty chloroform was used. The youngest patient was six months old, the oldest fifty-five years. Twenty-four were under twenty years.

Dr. John Wyeth,[7] of New York, performs sev-

enty-five per cent of his operations under chloroform, but when operating on children he uses ether, as he considers chloroform too dangerous.

McGuire[8] says, "Recent investigation, however, seems to show that ether is equally as dangerous (as chloroform) under similar circumstances." With this I cannot agree.

Dr. Hill Hastings, when house surgeon at the New York Eye and Ear Infirmary, went over the record of tonsil and adenoid operations, covering thousands of operations which had been performed during a period of five years, and he did not find a death. Indeed, I believe they have never had a death from the anesthetic in this operation, and ether is invariably used.

In personal communications from Dr. E. A. Crockett and from Dr. Philip Hammond of Boston they report that they have never known of a death in Boston from ether in the tonsil or adenoid operation. I may add that, in Boston, ether is always the anesthetic used, and that the patient is placed in the upright position for the operation.

Among the thousands of operations covered by the reports of Hastings, Crockett and Hammond there must have been some operations on children with the status lymphaticus; and yet, among these reports there is not a fatal result, and all were operated upon under ether.

A few miles from Los Angeles, in a seaside town of some 10,000 inhabitants, there have been three deaths within a year; these occurred during tonsil or adenoid operations, and chloroform was used in each case.

In and about Los Angeles the following deaths have occurred as the result of anesthesia. In only one case was autopsy permitted, and in this the status lymphaticus was found. In several others there is no doubt that this condition was present, but in absence of autopsies no positive claims can be made.

I wish to thank Dr. F. D. Bullard of Los Angeles for his kindness in securing me the report of most of these deaths.

Chloroform.

Case 1. Boy, aged 13 years, operation, removal of tonsils and middle turbinates. The anesthetic was taken nicely, and the operation was completed with the patient in good condition. His pulse then became irregular, breathing shallow, and face suddenly blanched; after the beginning of artificial respiration, he gasped two or three times, and then expired.

Case 2. Child, operation, removal of adenoids. The surgeon had just started to remove the adenoids when it was noticed that breathing had stopped. It was then found that the heart had ceased beating. This child previously had chloroform administered for circumcision. Was this a case of intermittent lymphotoxemia?

Case 3. Child, operation, removal of adenoids. The surgeon would not reply to my letters asking for details of the case.

Case 4. Child, operation, removal of tonsils and adenoids. This case is reported in the words of the surgeon in whose hospital service it occurred. "The patient, a girl twelve years old was brought into the operating room at the ——— Hospital, anesthetized and ready for me to operate upon. I had never seen the patient before. My memory is that she was a healthy looking girl of about twelve years of age, of medium build, neither fat nor thin. The patient was not fully under the anesthetic, so operation was delayed until the anesthetizer stated she was fully anesthetized. My recollection is that not a long time elapsed before operating and not much anesthetic given, but I was not paying attention to that part of it. I remember, however, that there was no struggling during the removal of the tonsils and adenoids. The operation itself took a very short time, I should say not over three minutes. On completion of the operation I was struck at once by the extreme pallor of the patient and the fact that she was not breathing. There was no cyanosis. I do not remember whether the pulse was beating or not, nor whether the pupil was dilated or not, or responsive to light. Artificial respiration and other measures were promptly used, but without the slightest sign of return of the respiration or the heart beat. No autopsy was secured. Chloroform was used because I had failed to tell the interne my preference for ether. The interne told me he had examined the chest and that the heart was normal. The patient had only been in the hospital an hour or two, so that nothing was known of her."

Case 5. Adult, operation, extraction of tooth.

Case 6. Woman, operation, dressing surgical wound, ether had been used at the operation.

Case 7. Adult, operation, lancing of carbuncle on the neck.

Case 8. Adult, operation, avulsion of the toe nail.

Case 9. Adult, died while preparing the abdomen for operation.

Case 10. Adult, died before beginning the operation; fear probably figured largely in this case.

Case 11. Adult, tonic spasm of the jaw, probably "swallowing of the tongue." The attendants were unable to open the mouth.

Case 12. Adult, lancing of carbuncle.

Case 13. Adult, uterine curettement at early stage.

Case 14. Adult, uterine curettement at the end of the operation.

Case 15. Adult, hemorrhoids, death occurred during dilatation of the sphincter.

Ether.

Case 16. Woman, age 36, death occurred from edema of the lungs, one hour after a prolonged operation.

Bromide of Ethyl.

Case 17. Woman, age 23, native of Sweden, operation, extraction of teeth. Three minutes after administering two drachms of bromide of ethyl, extraction was begun. One tooth had been removed with some difficulty, when the patient blanched and breathing became shallow. Artificial respiration was commenced, giving slight improvement of color, which immediately became bad again. Dr. Stanley P. Black made an autopsy, and his report is as follows:

"Body well nourished; subcutaneous fat tissue well developed. On removing the sternum, the thymus gland was situated beneath the manubrium, size 3 by 2 1-2 by 3-8 inches. Lungs normal. Heart, left ventricle well contracted, right and ventricle flabby, cavity empty, valves normal. Liver normal. Spleen somewhat enlarged. Pancreas normal. Kidneys normal. Intestinal tract; the solitary follicles at base of the tongue in esophagus, stomach, duodenum, jejunum, ileum and colon quite prominent, standing up under mucosa like shot. Peyers patches likewise swollen. Glottis normal. Diagnosis: Paralysis of right ventricle. Status lymphaticus."

The records of the deaths of some of the patients under chloroform anesthesia have shown a history

of having successfully taken this anesthetic once, only to succumb to a later administration of it. An intermittent lymphotoxemia could easily account for this, the lymphotoxemia being in abeyance at the first, and present at the fatal administration. Whether or not death would have occurred in these cases if ether had been used it is impossible to say. We do know, however, that in most of the fatal cases cardiac paralysis occurred; and that chloroform is a cardiac depressant, while ether is a cardiac stimulant.

The status lymphaticus is most common in the first decade. Is it merely a coincidence, then, that in this decade a greater proportion of deaths occur from chloroform than from ether?

1. We should always keep in mind the possibility of the status lymphaticus being present in children who have enlarged superficial lymph glands, adenoids, or signs of rachitis.

2. In the status lymphaticus, *all* anesthetics are dangerous, but particularly chloroform.

3. In *all* operations on children avoid *chloroform.*

4. In operations for the removal of tonsils and adenoids, ether, is the safest anesthetic to use.

REFERENCES.

1. Kolisko. Brickner on Ether, in Foster's Therapeutics, Vol. 1.
2. Blumer. Johns Hopkins Bulletin, Vol. 14, No. 151, October, 1903.
3. Olmacher. Journal American Medical Association, Vol. 42, No. 7.
4. Halstead. Philadelphia Medical Journal, Nov. 3, 1900.
5. Sanford. Journal Laryngology, August, 1894.
6. Dr. W. J. McCardie. British Medical Journal, Jan. 25, 1908.
7. John Wyeth, M. D. New York Medical Record, March 10, 1900.
8. McGuire. Buffalo Medical Journal, Nov., 1904.

Discussion.

Dr. F. D. Bullard, Los Angeles: Mr. President and Gentlemen of the Society—Although I reported these cases to Dr. Roberts, I am not responsible for them all. One, however, was my case. This patient died either from the anesthetic or from some other cause. I think it was shock. An autopsy was held. The patient blanched. She was not cyanosed. Artificial respiration accomplished nothing, which is characteristic of that form of death Any anesthetic to be given in status lymphaticus should be a heart stimulant. Bromide of thyl is a heart stimulant. Then, as a rule, it is safe. Under ether the patient becomes red in the first stages at least, and in giving anesthetics in adenoid operations if you use Wyeth's hot air method of giving ether, heating it, you will only have a prolonged first stage, and the operation can be done then, and I believe there is no record of a death under primary stages of ether anesthesia. Chloroform under no circumstances should be given in any operation about the face that occasions a deal of pain, as extraction of teeth and the removal of adenoids do. I have now given anesthetics in nearly 7000 cases, and I become more and more an ether man, and do not give chloroform to children. I agree entirely with Dr. Roberts. I may give a very few whiffs of chloroform, perhaps preceded by cologne, to sort of get the patient going, but I go right on with ether, and I can get quicker results with ether than with chloroform. Then, again, the after results of ether are not so bad as with chloroform very frequently. You do not have that fatty degeneration of the liver which will come from chloroform more frequently than from ether. I believe with the doctor that only a physician should give anesthetics, and I believe, also, a person who has had a great deal of experience, for there are five things to be watched continuously in all anesthetics, namely, the respiration, the pulse, the color, the condition of the pupil and the muscular relaxation. If you have these five things in perfect accord you are safe. If one is not good, look out. If two or three of them are bad, you are in danger. If any one of the majors is bad, look out. If with dilitation of the pupil you still have mobility of the pupil and a redness of the skin and increased heart-beat, you are in a safe condition. But on the slightest sign of blanching the anesthetic should be removed. Once in about a hundred cases, bromide of ethyl causes blanching. If they don't turn red I throw away that anesthetic. Chloroform frequently may be a heart stimulant, but it so frequently causes blanching that I have concluded to throw it out. But for quick operation never give chloroform. It is dangerous, because a large percentage of the deaths come early. Only one of the twenty deaths around Los Angeles occurred late in the operation, and that person had been on strychnia for some time and had come to the hospital and quit the strychnia, and the physicians didn't know that, and therefore was in a condition under par. That person had three times before taken chloroform. It was an adult and might have been an intermittent intoxication, as Dr. Roberts describes.

Dr. S. P. Black, Pasadena: The subject of the status lymphaticus is of extreme importance to the operating physician, and to the physician after death of a patient. In the first place, it is of the utmost importance to be able to recognize the condition. That, however, is sometimes difficult. Oftentimes we find cases in persons of robust constitution apparently. One of these cases I made an examination of. He was a strong man, sexually almost over rather than under par. He was walking along in the dark and struck his hand against a table. In two minutes he was practically dead. He was picked up dying. In that case the coroner gave a certificate of heart disease, but the subject went to autopsy, which I made, and it showed a typical case of status lymphaticus. He was about 36 years of age, but I got a history afterwards that he had been subject to fainting fits from his youth. One time he struck his knee against a chair and fell over and was unconscious for an hour. In that instance if he had had an anesthetic during one of those attacks he would have died. In these cases the surgeon is often blamed for it. In Vienna I had a conversation with Kolisko. He said that all cases dying under an anesthetic had an autopsy in the medico-legal department. If the status lymphaticus was present it was counted an accidental death and the physician was not responsible. If we can find some way to recognize this condition it would be of very great importance. We know that it more frequently occurs in children, because most of these deaths from status lymphaticus are in the adolescent. Then in children, especially with adenoids, and especially if the spleen is enlarged or the superficial glands are enlarged, we should be extremely careful of any anesthetic, and with the history of anesthetics we should use only ether. Personally, I am always afraid of chloroform. And the fact that even a young patient with this condition has had chloroform does not mean that he won't die the next time. I remember when in the hospital during my interne service a boy who had been given chloroform repeatedly in a hip-joint dressing which was extremely painful. It was given by the junior interne in any way. He seemed to be immune. But one time he was dressed and the house surgeon was giving the anesthetic, using extreme care. After three whiffs the heart stopped and the boy was dead. In those days we knew nothing about the status lymphaticus, but this was probably such a case. That shows that

previous anesthetization does not show that the next time the patient will not die. So that we should not use that argument in favor of chloroform. The responsibility of the physician is certainly very great in these conditions, and we should avoid cardiac depressants of every kind. Now it is not only from anesthetics, but from trivial injuries such as would not produce death in an ordinary adult, as in the case I spoke of where he struck his hand. Many cases reported by Poltauf, where persons had fallen into the water but didn't drown—the lungs were free from water—but died of cardiac paralysis due to the condition of status lymphaticus.

Dr. Frank W. Miller, Los Angeles: I believe this paper is of as much importance or more, and more timely, than the ones that preceded it. While there is not much that is new in the others, this is comparatively new and something we have overlooked entirely in our operative work. I personally would like to thank Dr. Roberts for the paper, because it brings up a subject worth while. I want to speak of one thing, and that is the necessity for an anesthetic in nose and throat work, particularly in children. The doctor that preceded me said that he is taking out adenoids under local anesthesia. It is not so much because of the pain or discomfort as of the sight of blood and the nervous shock the child experiences, that I insist upon general anesthesia in children, and have, since the status lymphaticus has been brought to our notice, used ether exclusively. I will say, however, that I have used chloroform in probably several hundred cases with no bad results, but since the status lymphaticus has come before us I have stopped it. I have found, also, the position of the patient, either prone or the upright makes little difference. But I have always insisted upon a general anesthetic.

Dr. E. C. Sewall, San Francisco: I think perhaps not too much stress has been laid upon the danger from chloroform, but I think too little has been laid on the danger from ether narcosis. To continue in regard to the removal of the tonsils under local anesthesia: I think the effect upon the child's nervous system is often exaggerated in these cases. The main point in the removal of the tonsils is whether you can remove the tonsils or not under your local anesthesia. In an experience covering about sixty cases I have found absolutely no untoward results in these cases where the tonsils have been removed under local anesthesia. The pain evidently is not great, as I have said, in some of these cases, one of which was only five years of age, the child returned in a couple of weeks and sat quietly while I removed the remaining tonsil. Of course I believe the child or person from whom the tonsils are being removed must not be held in any way, but must be willing to have them removed. Often simply telling the child and holding him together, as it were, accomplishes this. The use of eucaine, as far as I know, is not accompanied by any bad results, and under its use we are certainly able to remove the tonsils absolutely thoroughly, and the danger which is present in the use of any general anesthetic is avoided.

Dr. Edward Gray, Eldridge: I do not care to go into a discussion about anesthetics, but wish to discuss the status lymphaticus, the subject of the paper. Although the subject is new, it has come before me in a practical way, and I wish for that reason to emphasize that portion of the chairman's very valuable paper. He refers specifically to the psychic states as having influence. For that reason I think you will bear with me—because these things do not occur so very frequently—while I relate the history of a case which came before my notice just about one year ago. The patient was a feeble-minded individual, 20 years of age. The feeble-mindedness was not of a very high order, but was accompanied by a partial paralysis, so that the girl was unable to live outside of a chair. Emotional disturbances were well marked in that girl. For instance, it happened at least once or twice that when supper was brought to her and she didn't feel like taking it at that time and from that girl she got angry and threw the contents against the wall, or something of that kind.

The history of what happened relates only to twelve hours, and I wish you to take note of this. What cause is there that can produce a fever that will rise in the course of three hours from absolutely normal temperature to 105°, to 106.5°, and then fall to 103.4° and be followed by collapse and death in four hours? That is the history of a fair-faced girl with a beautiful skin and auburn hair, who but for mental feebleness would have been a delight to look at. The history was simply this: This was an occasion when she was not feeling well. One of the girls undertook to press upon the girl a certain portion of food. She flew into a passion and threw the food away. In an hour and a half the temperature went up over 104° and then up to 106°. I was called at one o'clock in the morning, and seeing she was in a desperate condition remained till four o'clock, and the uselessness of remedies was emphasized under such conditions. No amount of strychnia nor the more rapidly acting nitrate of amyl by inhalation produced a particle of effect, and about five o'clock in the morning, just about twelve hours after the seizure, she was a corpse. We had a post mortem. Going through the ordinary routine we were baffled completely, until I said to my assistant, "Let us look at the neck." Going to the neck we found a persistent thymus. That was my first clue. Then immediately we paid attention to the spleen. On section of the spleen you ought to have seen the Malpighian bodies stand out, as the American Reference Handbook of the Medical Science says, "with vivid distinctness." Then there was hypoplasia of the large arteries, not at first suspected. So that the mechanism of that girl's death was the mental and psychic shock in the first place, which led to this paralysis afterwards. This case was reported in the American Journal of Clinical Medicine.

Dr. W. H. Smart, San Diego: I would like to inquire of Dr. Sewall whether he uses a local anesthetic in removing adenoids?

Dr. E. C. Sewall, San Francisco: I refer only to the use of local anesthesia in the removal of the tonsil.

Dr. E. W. Fleming, Los Angeles: Under the head of the status lymphaticus Dr. Black has said the most trifling injury will at times produce fatal results. Now suppose we take an illustrative case. We have a patient 7 or 8 years of age who has enormously enlarged tonsils and obstructing pharyngeal tonsil, who has associated deafness as the result of hyperemia and swelling of the tube, and who has a moderate enlargement of the superficial glands of the neck; and now we will say, just for argument, that there is also a certain amount of what seems to be enlargement of the spleen. As I understood Dr. Black to say, it is impossible to determine beforehand that one is subject to the status lymphaticus. Now in that case, would you operate, and if you do operate, what method would you follow? Would you give the patient an anesthetic or would you attempt to do the operation without one? Which would apparently be the safer course? I would like to put that question to Dr. Black.

Dr. J. H. McKeller, Pasadena: I have listened with a great deal of interest to Dr. Roberts' valuable paper and agree with him on every point. I think a general anesthetic should be administered in children, and I think that it should be ether or gas and ether. While working in the New York Eye and Ear Infirmary, for a period of about four months, the invariable anesthetic given was gas followed by ether. Not only was there no death, but I did not

hear of one untoward symptom. It seems to me the great objection to the use of ether for tonsil and adenoid operations is the increased secretion of mucus in the throat which sometimes interferes with our work, but the greater safety more than makes up for that drawback. I have never seen bad results in adenoid operations under ether except in one case in the upright position. In my cases I have the patient in the recumbent position and always insist on ether being administered. I only remember having seen chloroform used once for the removal of tonsils and adenoids, and in that case the patient died shortly after beginning the anesthetic.

Dr. Cullen F. Welty, San Francisco: I am not sufficiently familiar with the subject of status lymphaticus to make any comment. I have operated cases that have had enlarged thyroids, and just the other day I removed the adenoids and tonsils of a boy of about fourteen, who had a decided enlargement of the thyroid gland. I made careful observations of this case and there is nothing to report. I am familiar with two deaths from chloroform anesthesia, one following curettement and the other following the removal of tonsils and adenoids. I do not know the complete history of either case. I never use chloroform at all because I consider it dangerous. I practically do all my tonsils and adenoids under ether anesthesia, and in the following way: Patient given a hypodermic of morphin and atropia one-half hour before operation. Primary anesthesia induced by nitrous oxide, and then supplemented by ether through Junker inhaler. Ether slightly warmed. In this way the patient gets only the minimum amount of the anesthetic. I am confident that the administration of morphia and atropia reduces the amount of the anesthetic. Furthermore, the patients are much more quiet following the operation, and this is to be particularly wished for after complete enucleation of the tonsils.

Dr. F. D. Bullard, Los Angeles: What size dose?

Dr. Welty: Dependent upon the age and weight of the child. From one-twelfth to one-twentieth of a grain of morphine, one two-hundredth to one four-hundredth grain of atropia. In regard to local anesthesia for enucleation of the tonsil in children, I will say that it is not satisfactory in my hands. They will not keep quiet sufficiently long to accomplish what I wish. In grown people I use one-half per cent solution of cocaine, in one eight-hundredth adrenalin injection into the pillars. This is for small buried tonsils. The large tonsils I prefer to remove under general anesthesia. I have come to believe, from our pathologic findings, that if you are going to operate a tonsil at all, it should be removed with the capsule, or in other words, a complete enucleation.

Dr. F. L. Rogers, Long Beach: I feel that I might with propriety add something to what the writer of the paper, and previous speakers, have said, particularly from the fact that I hail from the city by the sea, where there have been reported three deaths, in fourteen months, from chloroform administration. The first case reported by Dr. Roberts happened in my office, one year ago day before yesterday,—following the amputation of two very large middle turbinates, a double tonsillotomy and a probing of the frontal sinus. I gave the anesthetic myself and was assisted by my regular office attendant, an experienced graduate nurse. The patient, a strong, well developed boy of thirteen, was examined by me on two occasions, for heart or lung defects and pronounced normal. He had the usual preparation for operation, cathartic and no breakfast and took the anesthetic without fear or protest. Squibb's chloroform was used; less than one ounce was required to give complete relaxation. Anesthetic was withdrawn and the work completed rapidly; bleeding was moderately profuse, and pulse good at the time the operation was completed; and respiration not seriously interfered with up to that time. As I stood beside the operating table, with my hand on his pulse I felt a sudden weakening of the beat and noticed a death-like pallor of the cheek; he was still breathing but it soon became intermittent and I realized there was serious trouble. Restoratives, artificial respiration, everything usually at hand were applied; two or three feeble gasps followed, but he never had a heart stroke we could feel after the first cessation of the pulse beat. I desire to call attention to two lessons which this unpleasant experience of mine teaches, and to say that I believe it cannot be too often repeated; first, that no matter how simple the operation to be performed on a child, the consent of both parents to the operation, either by word of mouth or writing, should be secured by the surgeon in advance, and then if possible have both within calling distance during the operation. In my case both parents were present and fully acquiesced in all that was done and exonerated me at the time and later both publicly and in private. I demanded that they do this, otherwise I would insist that an autopsy be held to further ascertain the cause of death. I have since regretted that a post-mortem was not held for the sake of demonstrating the presence or absence of the status lymphaticus. Second, in minor surgery about the head, particularly in adenoids, where a quick general anesthetic is required, I have for many years occasionally administered my own anesthetic, usually chloroform, and depended on my own alertness, a deft hand, and a well trained office assistant to bring my patient through safely. But since this very unpleasant experience, the first of the kind in nearly twenty years' work, I have looked with disfavor upon the practice and shall, in the future, I think, be much less inclined to take the double responsibility, that is better shared with a colleague; even though arranging for an anesthetist often results in unpleasant delays and consequent embarrassment to patient and operator. The case had no adenoids and had never had a previous operation or anesthetic. This unhappy experience came to me on the anniversary of the San Francisco earthquake, which I passed through the year before and it jarred my nerves quite as much as that. I am not superstitious, but you will pardon me for declining to operate on a case day before yesterday, (the second anniversary of the quake) and for assigning as my reason, the fact that I wanted to attend this meeting.

Dr. Geo. A. Hare, Fresno: I wish to thank Dr. Roberts for this most excellent paper that he has given us this afternoon, on a subject comparatively new to most of us probably, and entirely new to many of us. I have been more than surprised in listening to the discussion at the thought expressed by a number that all cases operated for tonsils should be under a general anesthetic. That thought, if I understood right, has been expressed by several.

Dr. H. Bert Ellis, Los Angeles: Adenoids, not tonsils.

Dr. Hare: I must have misunderstood.

Dr. C. F. Welty: I said to thoroughly remove all tonsils I believe it necessary in the majority of cases to give a general anesthetic. I referred to children.

Dr. Hare: I am glad I misunderstood. I was unable to bring myself to believe that that should be accepted as orthodox practice at the present time. I have operated in a good many hundred cases for the removal of tonsils. I formerly had a large amount of that work to do, and I have yet to give chloroform or any anesthetic half a dozen times to remove tonsils in children. I had immensely rather operate as Dr. Sewall has suggested without any general anesthetic for two reasons: First, I can reason with most children. It has been my observation that a child can be persuaded and reasoned with and operated on with as little shock as you can persuade them to take an anesthetic. I had rather reason with them, and I most always remove

one at a time and they return for the removal of the second.

A Member: Doctor, do you mean enucleation or amputation?

Dr. Hare: Both. I use cocaine and adrenalin, and while in the foreign clinics last year I found they did their adenoid and tonsil work without any anesthetics. I thought it was barbarous and think so yet. It was as much as I wanted to do to see it. I like to use cocaine and adrenalin, and while there are some features about it I do not like. I like it much better than cocaine alone, especially where I want a prolonged effect. I have been delighted with the facts brought out in the paper. It throws light on one or two cases in my experience that I confess have been enigmas to me. I believe I now have an explanation for one case that I had. I want to say in the work of Dr. Mittendorf, who uses a general anesthetic for the removal of tonsils, I saw an experience that I do not want to see repeated. It was with the utmost difficulty that the child's life was saved.

Dr. W. S. Fowler, Bakersfield: I regret exceedingly that I have to report in regard to my experience covering eighteen years, in which I have invariably used chloroform, that in the past year we have had five deaths on the operating table in Bakersfield, three from the use of chloroform. The other two had not taken a whiff of any anesthetic. Now had either one of those individuals received chloroform or ether they would have died as quickly, fright being a factor in one case and an enlarged thymus in the other, and we would have had the credit of two more deaths under chloroform. I do not like to claim to be an expert in using chloroform, but I think it requires much more care in these operations than when used in the ordinary small operations, and I believe that the experience of the profession at large is that it has not been so dangerous as appears from the discussion today.

Dr. S. P. Black, Pasadena: It is hard work to answer a hypothetical question, as is known by those who have had that experience on the witness stand. But in a case of that kind I think I should warn the parents of the child of the possible danger. I do not think we are ever justified in giving an anesthetic without giving a warning in any condition; but if they consented I should use ether if I gave a general anesthetic. I do not know how eucaine would work. As we know, cocaine produces a great many sudden deaths, and possibly these were cases of the status lymphaticus. I should not under any circumstances use chloroform or cocaine; eucaine possibly—it is on trial—or ether.

Dr. E. W. Fleming, Los Angeles: Would you operate without an anesthetic?

Dr. Black: No.

Dr. K. Pischel, San Francisco: These exceedingly interesting reports show the truth of my statement before, that operations done without a general anesthetic involve certain dangers. If I am correctly informed, death several days after from autointoxication is more frequent. Therefore, I think if the family asks us we have no right to say no possible harm can come from an operation. We cannot say it has nothing to do with the operation. The family will not think so. When we are called into a case such as tonsils we are not called as carpenters to cut something out, but as physicians to cure the patient and therefore it is our duty to inform them that there are certain dangers involved.

Dr. W. H. Roberts, Pasadena (closing): One objection I would have to using local anesthetics in doing tonsil work is because in the vast majority of cases where we are called upon to remove diseased tonsils there are in addition enlarged adenoids, and while we can anesthetize the tonsillar area, we cannot anesthetize satisfactorily the adenoid area. I think the shock which the child sustains through having adenoids removed under a local anesthetic more than outbalances the shock they might have from a general anesthetic. I do not believe that we can produce sufficient anesthesia of the tonsillar area unless we inject the pillars. The little patients I see in my practice would not allow me to remove the tonsils under a local anesthetic, because when I remove the tonsils I do a complete enucleation, doing a dissection from the pillars and removing the tonsil within its capsule, with a cold wire snare. I operate invariably with the patient in the upright position, and generally by natural light. I have a north light in my operating room so that, except on very cloudy or foggy mornings, I never have to use artificial illumination. I always have the child thoroughly anesthetized before raising, and then maintain the anesthesia with a foot pump apparatus with a tube going through the nose. My anesthetist uses the Brophy apparatus and it is very satisfactory. With this there are two bottles so that none of the pure ether droplets can get into the child's throat after passing through the second bottle. The objection to ether is the abnormal amount of mucus secreted, but if we are anticipating trouble we can use a preliminary injection of atropine, the amount to be regulated by the age of the child, and that eliminates that difficulty and also fortifies the child against shock. One other thing Dr. Black spoke of, and that is that there have been many sudden deaths from cocaine; more than physicians are willing to admit. I think cocaine is more dangerous than ether, no matter how little may be used, and then with any local anesthetic there is the element of shock left, because it is almost impossible to render the operation absolutely painless under local anesthesia.

The Chairman: This completes the program, but I understand Dr. Pischel wishes to show a new instrument, and if so this is the time to present it.

Dr. K. Pischel, San Francisco: In connection with this tonsil work I take the liberty of showing an instrument which in my hands helps me in tonsil work under a general anesthetic. I find difficulty in holding the tongue depressor properly. The tongue holder slips in all directions, and so I devised an instrument which I think avoids it. It is a tongue holder constructed like a tongue depressor with a blade to put under the tongue. Then the upper blade contains a fine needle so that the tongue is held quite firmly. At the same time you can move the tongue depressor to the right or left. If one wants to operate on the left tonsil the tongue depressor is moved more to the left, and the tongue can be pulled forward as is found necessary. I would be glad to show that around and would like the gentlemen to try it. I am sure you can make some improvement on it. It is a rather rough instrument which might be improved. The blades do not come together entirely so as not to pinch the tongue too much, but they come together to within about 1 m. m.

Dr. Pischel exhibited and demonstrated the instrument.

"THE OVER-PRODUCTION OF DOCTORS."*

By H. S. DELAMERE, M. D., Ferndale.

In almost every number of very nearly every medical journal published in the United States, we find one or more articles, offering suggestions as to the best method of doing away with some wrong or evil, with which the medical profession has to contend. In one case we are told of the laxity of examining boards, in another of the patent medicine

* Read before the Humboldt County Medical Society.

evil, in another of the much advertised proprietory remedies of the great manufacturing pharmacists; but in none of them do we read of the great evil; the one which is responsible for practically all of the evils with which we have to contend. I refer to the great over-production of doctors. For some strange reason, no one ever mentions this fountain head of all our troubles.

All the subjects mentioned are real evils, not only to the medical profession but to the laity as well, and all go to show the acuteness of the struggle for existence by the members of our profession.

Unfortunately the physician is compelled to eat, drink, wear clothes and find shelter the same as other people, and as society fails to furnish him with these things free of cost, it is incumbent on him to provide them for himself.

If, as is almost certain, the doctor finds himself in a community where there are more doctors than there are patients, he is soon going to be compelled to figure out a plan by which he can live; hence the resort to so many undignified and unprofessional acts.

The doctor may have started on his professional career with the highest ideals; with the noblest conception of a physician's duty, both to his profession and to the community in which he lives; but the lack of bread and the need of a new suit of clothes, becoming too pressing, he at first, outraged his feelings by what he perhaps considered to be a commercialism. That was the entering wedge. He found comfort in the money of unprofessionalism, suffering in the poverty of idealism. The next step and the next, became easier, until all ideals were shattered and we have only an advertising quack, in place of our high-minded ideal physician. He was not a weak man, an incompetent man, an ignorant man, an impractical man nor a fool. He was simply the victim of circumstances over which he had no control. There were too many doctors in the place and some one had to starve or resort to questionable methods in order to live.

How are we to better these conditions? It is very simple, stop over-production. No one burns houses in order to give contractors big prices for building other houses. Then why destroy doctors in order to give from five hundred to one thousand dollars per head to the faculty of a medical college, to build other doctors?

I think it has been generally recognized that one doctor to one thousand people is an ample supply, and as far as I can learn, the medical colleges convey the impression to their victims that there is no difficulty in finding places where that proportion of doctors to population exists; but there are no such places. We have from three to six physicians where one is needed, and still they come, more and more. Los Angeles county, California, with a population at the last census of 170,298 shows in the register of 1907, 741 doctors instead of 170.

All our legislation has done nothing for the doctor, except to rob him of his liberty as a citizen, to go where he pleases to work for an honest living. The only parties who have benefited are the medical colleges, and it is they or their friends or representatives who have framed all our medical laws. In their interest every old practitioner who can be eliminated from the profession is worth from five hundred to a thousand dollars in tuition fees.

It is the great *number* of these colleges which is the cause of the whole trouble. It is absolutely impossible to keep up all these medical colleges and to furnish a profitable number of pupils to each, without producing far more doctors than can possibly find localities in which to make an honest living.

We need the legislation to correct the medical college evil, instead of to prevent the graduate of the college from following the profession in which he thinks he is educated. If we can force a proper standard upon the college, the graduate will soon be able to take care of himself. In California I believe we have eight or nine chartered medical colleges and almost every state in the union, according to population is similarly encumbered. The state of California should have just one medical college. That should be a good one, would be all sufficient, and should be under state supervision, as should every medical college in the land.

The medical college evil cannot be entirely corrected by legislation, it would be impossible for the profession to combat the colleges in the various state legislatures. What might be done, however, is for the American Medical Association, aided by the state and county societies, to adopt a by-law that every medical student shall study at least one year in the office of a legally qualified physician before he be permitted to enter a medical college. The great weeding out process would then take place in the physician's office and thousands would there abandon the study of medicine for other pursuits. Then let the doctors of each state select by vote, taken in the county societies, one medical college to which they will recommend their students, let all be loyal to the majority vote and the colleges which cannot be legislated out of existence will have to close for want of victims to pay tuition fees. When we get the colleges reduced to one in each state and the students reduced to the number who can show a member of the medical profession their natural adaptability to the healing art; there will be no trouble with quacks and but very little from the other troubles which beset the path of the honorable physician, and the public will be ridden of an army of suffering victims, of the avariciousness of the "leading" physicians who run medical colleges for tuition fees and the advertising they get as professors of those colleges.

All our legislation deals with the poor victim after the medical college has got his last cent. Instead we should have laws dealing with the colleges, compelling each and every one of them to do its whole duty by each student and inflicting a penalty on the college that graduates a student who can not pass the state examinations, also a law to punish the doctor who would give a certificate of study to a student who had not completed his full year of study in his office. Provision should also be made

by which the state educational authorities should be represented at the examinations for the medical degree and that degree once granted under such safeguards should enable the man who graduates in one state to practice in any other state, without being further troubled with examinations.

Let us reduce the number of medical colleges to one for each state and we will soon have uniform laws in all the states and the man who is a physician in California will be the same in Oregon, Massachusetts or Maine.

One other thing that the Americal Medical Association should do is to send circulars to all the high schools, giving the graduates correct information as to the exact condition of the professions of medicine and dentistry. Let the pupils know that the only possible hope for them to earn even a very modest living in those professions is through the downfall of some one else. A united effort on the part of the profession along these lines would soon eliminate the superfluous medical colleges as well as their superfluous students and place the whole profession in a position of respectability, at the same time relieving the general public from the unnecessary burden of maintaining an army of superfluous doctors.

This, gentlemen, is far from treating the whole subject involved. It would need a book and not a mere hasty paper; but I hope some of the ideas here expressed, thus imperfectly, and feebly, may furnish food for thought.

THE UNDERLYING PRINCIPLES OF ANTI-PLAGUE MEASURES.*

By RUPERT BLUE, M. D.; P. A. Surgeon, U. S.; P. H. and M. H. S., San Francisco.

In a previous paper the technic of a plague campaign was discussed. In this article it is proposed to deal with the reasons for the measures previously indicated.

If the basic principles affecting the spread of any disease among the lower animals and the mode of conveyance to man are well understood, the task of eradicating that disease consists simply in the logical application of this knowledge and the measures to be deduced therefrom. Prior to the discovery of the mosquito-transmission of yellow fever we could limit in some measure the spread of that disease but we did it at enormous expense of money and energy, for we were fighting in the dark. Since Reed's epoch-making discovery, the complete eradication of yellow fever has become a comparatively easy and inexpensive matter. While this is not wholly true of plague, for we still lack much knowledge of the disease, the simile is not badly taken, and it is hoped that a thorough discussion of the *raison d'etre* of anti-plague work may prove profitable to all of us.

The two fundamental factors in the spread and continuance of plague are the rat and the flea. It is therefore apparent that the partial solution of the problem of the eradication of pest must lie in the study of the habits and life history of the animals and insects liable to have and to spread the disease, and the application of the facts acquired by such study. Let us first consider the rat.

We have found in San Francisco the mus decumanus, or large gray Norway rat; the mus rattus, or black Indian rat; the mus Alexandrus, or red rat, and the mus musculus, or common mouse. The following is the percentage of the different varieties:

Mus decumanus	80%
Mus rattus	6.8%
Mus Alexandrus	.2%
Mus musculus	13%

In addition to the above a few hybrids, a cross between the mus decumanus and mus rattus, have been found. Their number is so insignificant, however, that they need not be considered further.

It would be logical to expect that the chances of infection would be greatest in the mus decumanus on account of their overwhelming numbers and wide distribution, and this is found to be a fact, for only a few infected mus rattus have been discovered, and no infected mus Alexandrus or mus musculus. The mus decumanus is so much larger and fiercer and exists in such large numbers that there are only a few places in San Francisco where the mus rattus is found and the mus Alexandrus is rarely captured. The mus musculus lives in very small holes and does not come in open competition with the mus decumanus or else the mice would also be reduced to the minimum by the gray rat. I believe this condition of affairs exists in almost all American coast cities so the only rat to be considered, in an urban plague campaign, is the decumanus or Norway rat. In the country, especially in California, the animals to be taken into account are the ground squirrel and the gopher, and to some extent the field rat.

We have found in our work that a rat-run usually branches like a Y. At one extremity of the fork is a little store-house in which may be found corn, wheat, pieces of bread and apple cores. At the other end is the nest made of rags and feathers laid on straw or hay and offering an ideal breeding place for fleas. This display of ingenuity and foresight gives us a clew to another characteristic of the rat, namely, his sagacity. There is no need to dwell on this point, which is well known to every one, further than to call attention to the fact that when man begins to fight the rat it is a battle between the intelligence of the one and the instinct of the other with the advantage not always on the side of the former. The rat is a subterranean animal by force of circumstances and leaves his home chiefly in search of food and water. In cities his great highway is the large sewer which also furnishes him with protection, food and drink. It is the migratory rat, traveling as a rule by way of the sewers, which spreads the infection of plague in this city. The mouse, a household animal, is non-migratory, and although some thousands have been

*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

examined, not one has been found infected. Measures, therefore, tending to prevent rat migrations by this and other routes should be undertaken with the least delay. The large brick and mortar sewers should be carefully inspected inside and out, and all holes and runs affording ingress and egress to rats should be sealed. Runways beneath board walks and under fences, which permit travel from house to house, should be destroyed.

The fecundity of the rat is proverbial and on account of the extreme rapidity with which rats will increase, their extermination by trapping and poisoning *alone* is a difficult and expensive process. While this means of extermination is important it should never be attempted without a coincident abolition of the rats' food-supply and habitation. The former is accomplished by the rigid enforcement of ordinances covering the collection and disposal of garbage, the screening of all places where food is stored, the rat-proofing of restaurants, markets, stables, warehouses, and ground floors with concrete and cement, frequent sweeping of the streets and cleansing of all premises and vacant lots. It will be observed that cleansing in plague sanitation means the destruction of rat-food and rat-habitations. To accomplish the latter, it is necessary to search for rat evidences and rat harboring places in all premises. These will be found chiefly in and around stables having wooden floors and faulty manure bins and feed boxes, in fact, under any place of wooden foundations. The brick debris of the great fire and the lumber of the builders of San Francisco have furnished ideal breeding places for rats. Every place of human occupation must be rendered permanently rat-proof if the disease is to be eradicated for all time from the infected city. This is not the work of one season alone but should be made a continuous improvement enforced by strong building laws. In other words, the disease must be built out of existence. This is the hope of San Francisco and in time that city will be one block of concrete throughout, and the gateway to the Orient closed against plague.

The starved and homeless rat takes poisons and enters traps more readily and this brings us to the second phase of the subject; namely, trapping and poisoning. Rats are extremely wary animals and enough cannot be caught by inexperienced men to greatly reduce their numbers. It therefore becomes necessary to place intelligent men at this task and to train them carefully in their duties. A man can no more be made a rat-catcher by giving him a rat-trap than he can become a soldier by being provided with a rifle. Those interested in the technic of rat-catching will find an article on the subject in the Public Health Reports for February 28, 1908. Poison, when used, should be intelligently placed so as to be inaccessible to children and domestic animals.

The rat-fleas found in India show a great preponderance of the pulex cheopis but in San Francisco the ceratophyllus fasciatus is in the majority. The percentage as we have observed it has been as follows:

Ceratophyllus fasciatus	79.2
Ctenopsylla musculi	6.7
Ctenocephalus canis	.8
Pulex irritans	7.6
Pulex Cheopis	5.6

It should be borne in mind that these percentages are subject to great variation.

While exterminating the host, a great deal can be done to limit the number of the parasites. The rat nests, wherever they may be found, under wooden floors, in hollow walls, or in the yards, contain countless numbers of flea eggs. For my part I do not believe the rat-flea breeds to any great extent in the sand of the street and the vacant lot, but that his natural habitat is the nest of his normal host, where the eggs are deposited during summer and autumn. If nothing interferes these eggs hatch the following spring and summer and the adult flea attaches himself to his chosen host on the advent of the first warm weather. If these nests and burrows could be destroyed during the off season of plague, millions of possible plague-carriers would be eliminated. These nests should be uncovered and their contents burned. Flooding the holes with a strong carbolic acid solution, creofect, or chloronaptholium is also recommended as a reliable measure. This is one of the reasons why we have torn up board walks, cellars, stable floors, backyard coverings, etc. The floors and carpets of theatres may be sprayed once or twice a week with some reliable insecticide. Such solutions often contain carbolic acid and may be objectionable on account of their odor. Carpets and rugs should be taken up and beaten in the open air and sunned at least twice in the flea season, between April first and September first.

The seasonal prevalence of plague is coincident with the season of greatest activity of the ceratophyllus fasciatus and pulex cheopis. The flea does not breed in the cold wet months and it is at this time that they are fewest upon the rats. Last January twenty rats were combed before a single flea could be found. By the first of February the average was two fleas per rat and this number gradually rose to 4.6 on March 1st and is now about ten per rat. Last September when the number of human plague cases was greatest the rats showed about thirty fleas each. Thus we see that human-plague prevalence is directly as rat-flea prevalence. In the face of this comes the apparently contradictory fact that plague among the rats was greatest when the number of fleas and the number of human cases was at the minimum. In winter the rats' food supply is at the lowest point and the cold wet weather makes them loath to leave their burrows in search of sustenance. It is then that they begin to eat one another and as the sick rat is least able to protect himself, he is the first to become a prey to the stronger members of his tribe, and those who partake of his infected tissues become in turn infected, thus spreading the disease in the geomet-

rical ratio. In addition to this, the cold rats huddle together and if there be but a single flea present he may infect the entire number. We have here the explanation of an active epizootic of plague during the quiescent period of epidemic plague.

While plague may prevail among human beings in San Francisco throughout the year, its season of greatest prevalence begins in August and continues until the end of October. From January 30th to April 21st, although there was a large percentage of infection among rats captured in densely populated sections of the city, no case of human-plague occurred. In some districts the infection ran as high as 1½% of the rats examined. That epizootic plague is not always followed by epidemic plague was observed in Childers, a small town in Queensland, Australia. In 1905 nearly the whole rat population died off and only one human case occurred. In Cardiff (1901) a large rat mortality was accompanied by only one human case (Burnet Ham). There is one notable instance on record, namely, Glasgow, (1900) where epidemic plague was not preceded by a plague mortality among rats. This may be accounted for by the fact that rats often seek inaccessible places when sick, and unless a careful search is made in such places no cadavers will be found. This digression is simply to show the need of exterminating rats in the winter when there are few fleas. Second, of destroying their habitations in order to lessen the number of fleas as well as the number of rats.

Passing from the consideration of rodent-plague let us now take up human-plague and the way in which its various forms affects the problem of its eradication. On account of improved hygienic conditions, personal cleanliness, etc., human agencies do not play as important a role in the dissemination of plague in Occidental countries as in the Orient. We also know that human transference, except in the pneumonic form, is relatively infrequent among persons free from vermin. In the absence of the pneumonic and eruptive forms of the disease we may concentrate our forces on the destruction of the rodent and his parasites. The purely bubonic form is practically non-contagious from man to man, and if there are no suctorial insects present the same may be said of the septicemic cases.

The pneumonic cases are very contagious. For the first two forms fumigation and disinfection are done to kill fleas and other vermin; in the latter, to kill the bacillus pestis as well. In the uncomplicated bubonic cases the aim is to destroy the original infecting agent and not something which the patient himself has created. This means that the place where the disease was *contracted* is to be subjected to thorough fumigation. It should not be forgotten, however, that a bubonic case may secondarily become septicemic or pneumonic, and for this reason should be kept under constant observation. All cases should therefore be removed to a hospital situated in a rat-proof compound.

The fumigation of buildings and sewers for the purpose of killing rats has proven a futile measure, as the rat has already provided a means of escape and is simply driven out. Agents for patent methods and proprietary disinfectants do not understand this principle and often propose costly schemes for the fumigation of buildings and sewers to kill rats.

Plague may appear in many forms, and for this reason the busy practitioner with very little time for microscopic work may overlook atypical cases. In order to rectify mistakes in diagnosis, experts should be employed as inspectors of the dead and no burial permitted without a certificate of inspection. The expert will order a postmortem examination in all doubtful cases, as experience shows that numbers of atypical pest cases come to necropsy under such diagnoses as typhoid fever, pneumonia, appendicitis, acute nephritis, meningitis and abscess of the internal organs.

The immunization of large numbers of the population has yielded good results in India, and this protective measure would therefore seem to be indicated here. It is doubtful, however, if this will ever be practical in America. In a republic where many people object to such slight inconvenience as is caused by vaccination, few persons would submit to Haffkinization, which is sometimes followed by a severe reaction, and only protects for six months. Further, plague has not been sufficiently widespread to warrant the use of this measure.

If a plague campaign is to be successful in the broadest sense, it is necessary that the general public be educated as to the danger of plague, and the means of avoiding it. This is especially necessary in America, which has never experienced the frightful epidemics that have taken place in other parts of the world and the people do not realize what a menace plague is. A campaign of education is, therefore, one of the basic elements of success. The people must be approached in the easiest way and addressed in their own language. This means, reaching them through the improvement clubs, the neighborhood organizations, the church and special mass meetings. These meetings to be addressed by men capable of speaking on the subject and explaining in simple terms the means of spread and continuance of plague. This measure has been carried out with remarkably good results in San Francisco. The citizens have organized themselves into a sanitary committee and have given a tremendous impetus to this branch of the work.

Too much stress cannot be laid upon the necessity of having a trained force ready at all times to combat epidemic diseases. In San Francisco, as elsewhere, much valuable time was lost in training men to do ordinary labor necessary in all large sanitary operations. If the campaign had been begun with a force drilled and trained in the application of sanitary measures and well disciplined in the execution of orders, the epidemic might have been checked in half the time. The time has come when we should have a standing sanitary corps of trained men ready to take the field against any epidemic disease. Such an organization would pay for itself many times over in the saving of human life and the prevention of expensive quarantine.

OBSTETRICAL REMINISCENCES.*

By H. E. W. BARNES, M. D., Santa Ana.

"We pass the paths that each man treads, is green or will be green with weeds."

Knowing that "variety is the spice of life," it occurred to me that obstetrical reminiscences gleaned from thirty-five years' experience on the firing line in the middle west ought to be of interest to the younger members of this Society, and I trust the discussion will bring to the surface the rich store of similar experiences that are etched indelibly on the walls of memory of the old veterans that I have the honor of addressing and all this "lest we forget," for the old doctor, like the old soldier, is prone to "shoulder his crutch to show how fields were won" or lost as the case may be.

This recital will of necessity be of a personal character, partaking to a degree the nature of "Tales of a Grandfather." The ideal obstetrician should have the strength of Samson, the patience of Job, the wisdom of Solomon, and a knowledge of human nature that was possessed by Hugo, Dickens, and Shakespeare, in addition to a thorough knowledge of the entire subject, and a natural resourcefulness to meet and overcome emergencies that often "come not single spies but in battalions." Therefore I conclude that the personal equation is the prominent factor, and being "short" on all these qualifications in a new, sparsely settled country in Illinois at the age of 21 years, my first case was obstetrical. A normal labor, except that the umbilical cord was wrapped five times around the neck (a condition that I have never seen since) giving me the impression that they came in reels like spools of thread.

A short time after this, I was called several miles distant one summer night to the home of an influential and wealthy farmer. I well recall the horse I rode, a nervous, high-mettled fellow, who shied and bucked when a flock of startled prairie chickens whizzed out from under his feet and my saddle bags as suddenly and unceremoniously shot out from under me and promptly lit in the grass vacated by the chickens. By the aid of lighted matches, I recovered them, and went ahead. On arriving at the house I found that his daughter was very sick in bed with "colic" (that was their diagnosis). She was surrounded by ears of boiled corn, each ear wrapped in flannel, and was in a profuse perspiration. I observed that the pain was markedly spasmodic, also that during the spasm of pain she had a strong tendency to hold onto things within her reach. I found she was single and her mother in attendance. Here was a perplexing dilemma for a sappy doctor. If it was the colic and I should hint at anything else, I would be bodily "fired" and forever disgraced in that neighborhood. On the contrary, if it was not the colic and I did not make a diagnosis, they would soon demonstrate that I was as ignorant as I looked to be. It was then I "longed for the touch of a vanished hand and the sound of a voice" that wasn't there—my professor of obstetrics. I wanted time and a private interview with the party of the first part, so by a ruse I sent her mother to the kitchen to prepare some strong ginger tea; then I "crossed the Rubicon," and boldly said to the daughter, "you certainly know what is the matter with you, don't you?" She said, "well, I thought I might be in a family way." I then made a hurried examination and found the head resting on the perineum. When her mother returned I told her the truth. She left the room completely collapsed, and I was left master of ceremonies. When the head was delivered, and before I could extricate the shoulders, the mother of the child raised herself and struck a vicious blow at its head. This I countered with my left arm, and forced her back onto the bed, and told her that wouldn't go with me. She then offered me $500.00 to destroy it. This I declined with thanks. I realized that she was in a frenzy and hardly accountable for her actions. I quieted her by telling her that they could send the child to an orphan's asylum. I remained until I considered her physical condition all right and left. About a month after this, I met her father on the road. Making inquiry in regard to the case, he informed me that his daughter had recovered, but during the wet weather the child had taken cold and died(?).

Did we use antiseptic precautions in those days? We washed our hands often in a wash pan that had been in service for years and with a piece of soap that in months of use showed but little erosion. Then anointing the finger with lard that stood ready for the doctor in a tablespoon side by side with a piece of string and a pair of scissors. Yes, we treated the cord antiseptically in a way, i. e., dressed it with a scorched linen rag. The origin of this procedure is lost in the mist of antiquity. No case of any particular interest occurred to me until a few years after this. I was then in practice, associated with my brother Dr. S. M. Barnes and Dr. N. T. P. Robertson in Fairbury, Illinois. One cold, stormy winter's day Dr. Robertson was called sixteen miles into the country to an obstetrical case and I accompanied him. We went in a sleigh. Arriving at the house and while warming ourselves at a stove, they asked the doctor if he wantd to see the baby. He replied, "I will make an examination as soon as I get warm"; so they went into an adjacent room and returned with a box. In it was the body of a large child, minus its head. We soon found that a large muscular Amazon, an alleged midwife, was in attendance on the case. One of the tribe that "don't have no use for doctors no how." There had been a foot presentation, and when she learned that a physician had been sent for, she proceeded to put on the "high gear," and absolutely severed the body from the head. We found the head in the uterus. I gave chloroform, and the doctor by external and internal manipulations brought it into proper position, and by long and tedious work succeeded in locking a long Hodge

*Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

forceps on the head and delivering it. The mother made a good recovery.

Another case will serve to illustrate the necessity of adaptability to environment. One stormy evening late in October, I was called into the country to attend a case in a one-room shack located in a small clearing in the deep woods. The children had been distributed in the neighborhood. The husband was present, and two old ladies, one with chronic rheumatism and the other a confirmed asthmatic. About 10 p. m. we gradually went into cold storage. The fire had gone out and so had the husband. I inquired in regard to the strange disappearance of the head of the house at such a time, and was informed by his wife that "Abe never could bear to see me suffer," and had gone for the night, having by former experiences learned to avoid the great mental suffering and acute anguish of soul that these frequent and harrassing ordeals entailed on his sensitive nature. As there was no wood in the house, I enquired into the probable location of an additional supply that had no doubt been amply provided by this remarkably tender-hearted man, but found that the wife was not informed on matters outside of her own department. This was interesting. I found a lantern and sallied forth into

> "That night a child might understand,
> The de'il had business on his hand,"

and found no cut wood, but a dull ax, and in the adjacent woods, a tree top. This I attacked, and soon had enough wood cut to go through the night. About daybreak another scion was added to this home, and the question of race suicide happily averted. About "sunup" Abe came home smiling and hopeful. His wife kissed him and said she was mighty glad he hadn't been there, as she didn't think he could have stood it.

> "O, woman in your hours of ease,
> Uncertain, coy, and hard to please,
> When pain and anguish wring the brow,
> A ministering angel, thou."

Fidelity like this is the bulwark against race suicide, and sends thoughts of divorce courts glimmering in the gloaming. I evidently made a fine impression on my assistants, for in a few days the woman with chronic rheumatism sent her tow-headed boy to town on a mule to ask me which she had better buy, a bottle of Hood's Sarsaparilla or a bottle of Kennedy's Medical Discovery, as she couldn't tell to save her soul which was the best. It is little confidences like this that encourage the belief in the mind of the struggling medical tyro that altruism is to be preferred to egoism.

A short time after this, another dark and rainy night, found me eight miles in the country in attendance on another case. I found a head presentation and a cold, prolapsed, pulseless cord. I had no instruments with me. I decided that the indications were to deliver this woman as rapidly and expeditiously as possible. Out in the workshop I found a thick wire. This I cut and bent into a fish-hook shape, filed the end sharp, wrapped it to near the point with old muslin, anointed it with lard, introduced the point between the sutures, evacuated the brain, and removed the child and. went home. Fortunately, the woman recovered. My partners, while ostensibly approving of my successful operation mildly suggested that "a decent respect for the opinions of mankind" would be better conserved by calling for consultation and the use of well known and less primitive instruments. My egotism received a severe jolt but I learned my lesson, and never attended another case without being properly equipped.

About twelve years after this I was in practice in Iowa, and was called to see a case that occurred in the practice of my partner, Dr. Rawls, of Creston. The patient was an old primipara who was married to an aged man. This may account for the extreme ossification of the cranial bones of the child. It had a small bullet-shaped head that tore its way through the tissues to the left of the vulva, leaving the vulva intact, making a ragged wound. This the doctor repaired but septic infection followed and she had a long and tedious convalescence.

A few years after this I was called by a physician of experience to a neighboring town to do a craniotomy. The patient, a muscular primipara about 30 years of age, had been in labor for 36 hours. The physician had made a diagnosis of contracted pelvis and a dead child, and so announced to all concerned. I found pulsation of the fetal heart; a very large child; head presentation; as fully dilated, and believed that the apparent pelvic contraction was due to extreme muscular development. I refused to do a craniotomy, believing it to be a forceps case. The physician in charge "stood pat" and we disagreed. The husband decided that I might try the forceps and the physician reluctantly gave chloroform. After over an hour of hard tedious work, I delivered her of an apparently still-born boy, but by long and persistent artificial respiration, succeeded in resuscitating him. He has since grown to manhood, and his mother made a good recovery. This simply illustrates the fact that it is not always best to make a positive diagnosis in a doubtful case.

In the year 1893, a rare case of congenital malformation, complicating labor, came under my care for the second time. I kept full notes of this case at the time, as I should have done in all cases deviating from the normal. This lady was 33 years old at the time of her last confinement; she was perfectly formed, excepting that the rectum terminated in the vagina about two inches from the vulva; her weight was 165 pounds. This was her third confinement—the two previous ones necessitating the use of forceps—the first child living but a few months, the second, owing to the large size of the head and the compression required to effect its exit, lived but a few moments.

Her first confinement was conducted by another physician. She came under my care in the second, and when I was requested to again take charge of the case I was constantly in great trepidation until the labor was over. As the fecal discharges passed through the vagina the lower part of the

vulva partook of the nature of an anus more than of a normal vulva, hence when the head passed through the straits, it rested on the perineum, if it could be so termed. In her second labor the parts were so unyielding and tense that it was impossible to perceive any distention and the head of the child had to be crushed sufficiently to pass through this outlet. In the second labor she made a good recovery. I submitted the case to eminent gynocological authority with a suggestion to cut on each side of the vulvo-vaginal opening when the head rested on the perineum. They sanctioned and approved of the procedure. I submitted the proposition to the lady's husband (a very intelligent gentleman) who was perfectly willing, but no amount of persuasion could overcome the prejudice of his wife against any operation. Therefore, when I was called to attend her a second time, it was with the same feelings I had when I was called to my first confinement case.

The bowels were thoroughly evacuated before the labor began; the vagina disinfected, the labor came on rapidly, the head passing down and resting on the perineum in a much shorter time than in the second labor. In the same position where the second child became impacted this head came to a standstill. The uterine contractions were frequent and powerful. After a close examination I believed we had a smaller head to deal with than before. I applied the forceps and lifted the head up and out without any crushing efforts. The child (a girl) was born with no injury to the head. There were a few abrasions, as I afterwards discovered, of the mucous membrane at the posterior part of the vulvo-canal opening. The placenta and all the membranes were readily removed. I thoroughly disinfected the vagina with a one two-thousandth solution of bichlorid of mercury and felt that "all's well that ends well." But on the fourth day a chill supervened, the temperature ran up to 105°; she had delirium. I immediately washed out the uterus with negative results. The bowels had moved the second day but her husband had washed out the vagina thoroughly after each operation with bichlorid of mercury, one to two-thousand. I examined the vagina and vulvo-anal opening and found small abrasions in the mucous membrane that had a dry inflamed appearance. I believed then and do now that the discharges from the bowels passing over this abraded surface were absorbed and produced the infection. I applied a saturated solution of silver nitrate to the abrasions and considered the proper constitutional treatment to pursue. Should I give epsom salts? If I did not could I combat the violent peritoneal inflammation? If I did, I would be constantly pouring into a puerperal vagina a sewer of infection. Should I escape Scylla would I be wrecked on Charybdis?

I elected to administer the epsom salts and gave a saturated solution of half ounce doses every fifteen minutes from 4 p. m. until midnight. The discharge from the bowels at that time was watery, the temperature gradually came down and by noon of the fifth day was normal. After each and every discharge from the bowels her husband thoroughly irrigated the vagina with a one two-thousandth solution of bichlorid of mercury.

Sulphate of quinine in six grain doses was given for twenty-four hours, every two hours, and from one-half to one ounce of brandy every half hour, in all twenty-four ounces of brandy the first twenty-four hours. These doses were all gradually decreased; the second and third days one-half to one ounce of cold water was given as often as asked for, and that was every ten or fifteen minutes for the first twenty-four hours. She improved rapidly excepting an abscess formed on the left breast. I evacuated the pus and washed out the cavity with peroxide of hydrogen. The breast gave us no further trouble and she made an uninterrupted recovery.

Here was a case where vaginal injections seemed to be imperative and necessary, a procedure that in ordinary cases I regard as unjustifiable, meddlesome and dangerous. The mother and daughter are alive to-day, the latter a handsome young lady of 15 years.

I was called to see a case in Iowa in consultation with Dr. W. D. Christy then of Shannon City. The doctor has kindly furnished the following history, prior to my association with him in the case:

"I was called on the night of February 23, 1894, to attend Mrs. W., a farmer's wife, age 35 years, multipara, German. Found her having regular labor pains. Os high up. No presentment or dilatation. Anterior and upper part of vagina filled with what felt like a cauliflower growth, making it somewhat difficult to locate os. Was and had been having a slight discharge for several days, prune juice in appearance, with little if any odor. Found she had quickened, September 11th. Previous confinement some six or seven years prior; was tedious with instrumental delivery, and protracted convalescence caused by post partum hemorrhage. After waiting an hour or two with no increase in strength of pains or progress being made, gave her some quinine, which increased the strength of contraction for an hour, then gradually subsided and stopped at the end of five hours without any apparent progress having been made. Seven days after, pain returned and lasted about an hour with no result. On March 7th, I called to see her, and gave her a careful examination. No movement or pulsation discernable. On March 20th, cauliflower growth had entirely disappeared. Mucous membrane smooth and natural to touch. Discharge the same. Complained of sharp stinging pains in sacral region. Bowels constipated. Urine scanty and irritating. Both troubles relieved by small doses of cascara and buchu. But no return of labor pains after March 7th. There was a gradual decrease in size and weight of patient from March 1st, at which time she was a plump, healthy looking woman."

May 21, 1894, I saw her and found the os uteri completely obliterated. Under anesthesia and

proper antiseptic precautions, the doctor making counter pressure on the fundus of the uterus, with my fingers and thumb, I gradually forced my hand through the tissues and into the uterus. I found a very large mummified fetus that I removed by podalic version. During this maneuver, while removing the head, the uterus was torn from its posterior attachment to the vagina. The membranes were very thick. No liquor amnei. The fetus weighed ten pounds. Strict antiseptic precautions were carried out in the after treatment of this case, and beyond a slight raise in temperature the second day, she made an uneventful recovery, and was doing her work in six weeks. She was then examined by the doctor who found a contracted Douglas cul de sac from cicatricial tissue.

On the film of years I see moving pictures of a doctor lost on a trackless Iowa prairie in a howling, merciless blizzard on his way to attend an obstetrical case; of eclampsia, eight cases. One a mother at term with her seventeenth child. (All the mothers recovered and all were bled.) Pernicious vomiting of pregnancy, 2 cases; both died. Placenta previa, 3 cases; these mothers recovered; children still born. Postmortem hemorrhage, no record kept. Of number of forceps deliveries, about 10% of all cases, and presentations of every kind possible.

I have always used the abdominal bandage and in late years the rubber gloves, as you can boil the gloves and you can't boil your hands. I use chloroform in almost every case pushed to the point of light anesthesia.

A labor case is a psychical and mechanical problem and fortunate is the practitioner who, having confidence in his own knowledge and ability involuntarily so impresses the mind of the patient that she cheerfully acquiesces in the directions given her and has implicit confidence in him. Call it hypnotism or what you will, the mind of a woman in labor is in a peculiarly susceptible condition and she is soon either "en rapport" or disgusted with her attendant.

"Every pilot can steer the ship in calms,
But he performs the skillful part who manages it in storms."

PLAGUE.

Being a translation of the Fourth Chapter of "La Pathologie Exotique," by Professor A. Le Dantec of the Faculty of Medicine, Bordeaux.

Translated for the State Journal by Dr. W. C. RUCKER, P. A. Surgeon, U. S. P. H. and M. H. S.

(Continued from July.)

Haffkine's prophylactic may be prepared extemporaneously by the use of a culture upon agar instead of a culture upon bouillon. Two days suffice in this case. The bacillary puree is obtained by scraping the tubes of agar which is diluted with sterilized water and is afterward heated to 70°. Noc has used this method in New Caledonia, injecting ½cc at a dose.

We will consider in our chapter on treatment the results which have been obtained by injecting Haffkine's prophylactic in the prevention of plague.

Anti-pest material of Lustig and Galeotti. The two authors have modified the preparation of prophylactic lymph in the following manner: they cultivate the pest bacilli on gelatin plates, dissolving the cultures in a solution of caustic potash 1%, precipitating the nucleoproteid substances thus dissolved by a weak solution of acetic or hydrochloric acid, collecting the precipitate, washing it and drying it completely. This substance seems to be able to remain active indefinitely. The dose for a man is about 3 gm, which is dissolved in a sufficient quantity of a carbonate of soda solution, 50 gm. per hundred. The subcutaneous injection of this dose provokes a very marked, local and general reaction (Manson.)

Anti-pest vaccine of Yersin and Carre. The resistance which the Asiatics have opposed to the preventive injection, namely the anti-pest serum and Haffkine's lymph led Yersin to search for a procedure which would be applicable like Jenner's vaccination. With the assistance of Carre he tried at Nha-Trang to obtain an attenuated virus. He had at first ascertained that by the great age of cultures it was possible to have strains of pest bacilli possessing all the degrees of virulence from bacilli killing the rat in forty-eight hours to organisms which would not kill the rat at all. They found cultures which would kill 80, 50, 20, 10 per cent of the inoculated animals in times varying from 4 to 15 days. After long search, Yersin and Carre obtained a pest bacillus which did not kill more than 20% of the rats inoculated and which they called Bacillus C.

The germs, totally deprived of their virulence, would not vaccinate, but the feebly virulent pest bacilli would. A perfect immunity was acquired in about fifteen days. Did it persist? One experiment of three months is not enough upon which to base conclusions. The organism which killed 40-50% of the rats was inoculated into apes, which presented only a passing malaise and were finally resistant to virulent bacilli. Yersin inoculated himself with the Bacillus C. without other accident than a slight stiffness in the joints, and fever.

These inoculations are made with a lancet as in Jennerian vaccination, and this is the principal advantage of the method, that there is greater chance of its being accepted than when injection is used.

Anti-pest serum of the Pasteur Institute. This is at the same time an anti-microbic and anti-toxic serum because it is obtained by injecting into a horse, not only the pest toxin but also the dead bacilli. It was desired at first to try to make a simple anti-toxic serum as is made for diphtheria, but it was discovered that the bouillon of the culture freed of the bodies of the microbes by filtration was absolutely without action upon rabbits, whence the impossibility of making a simple anti-toxic serum. It was therefore necessary to have recourse to the total culture, toxin and microbic bodies. Experiments demonstrated that it was possible under these conditions to obtain a really efficacious anti-pest serum. Yersin, Calmette and Borrel worked first upon rabbits and later experimented upon horses.

They scraped gelatine cultures, diluted the scrapings with a little bouillon and shut up the mixture in a sealed tube which they heated at 58° for one hour. This mixture containing the bodies of the pest bacilli, injected in a small dose beneath the skin, into the peritoneum or into the veins, conferred an immunity against the subsequent inoculation with living or virulent organisms; 3cc. of the serum thus used sufficed to preserve a non-immune rabbit against a subcutaneous inoculation of living cultures. The same quantity of serum injected into a rabbit twelve hours after virulent inoculation arrested the development of the microbe and cured the animal.

These three experimenters then attempted the immunization of a horse and used for this purpose a pest virus killing mice in two days. But in the horse subcutaneous injection of virulent cultures caused indurations and finally carbuncles, therefore it was thought better to make the injection into the veins. The horse first received into his veins a plague culture killed by heating it, that is to say, the bodies of the microbes. Then beneath the skin a filtered

culture in bouillon, that is to say, the toxin. He received injections of living and virulent cultures until he would no longer react to them. It is wise always to proceed carefully, for the first reactions are intense in the inoculated animal. It requires almost a year of treatment to render the serum of a horse very active. Before delivery to physicians, its preventative and curative powers should be proven by the two following experiments:

(A) Preventive test. Expose a small proportion of the skin of a guinea pig by removing the hair. Paint this with a virulent culture of plague. Inject some of the serum into the guinea pig, after which he should not take plague.

(B) Curative test. Inject the foot of a mouse with a culture of the bacillus pestis upon gelatin. Six hours after the inoculation the mouse receives a subcutaneous injection of serum amounting to one-tenth of his weight. The mouse should not succumb to the disease.

When the horse is prepared by means of intravascular injections of living and virulent cultures, it is well to know at what moment the horse is completely free from these dangerous bacteria. Carougeau has demonstrated that the blood of the horse remains dangerous for more than forty-eight hours and that it is prudent to wait a fortnight after the last virulent inoculation before taking the blood for the collection of the serum.

We will relate, further on, the results obtained by serum immunization and by serum therapy with the serum of the Pasteur Institute. We will say in the meantime that in animals the immunity acquired by an injection of anti-pest serum does not last more than ten or fifteen days.

Anti-pest serum of Lustig and Galleotti. We have seen before that these two authors prepared an anti-pest substance which, injected into animals, protected them from taking plague. But these same authors have utilized the same substance for preparing a curative serum. For this they dissolved 100 gm. of the powder in a small amount of a 1% solution of carbonate of soda and diluted this with 100 gm. of artificial serum. The horses receive 400-1500 gm. beneath the skin. They are bled two or three days after the last injection. (Vassal.)

Anti-pest vaccine of Besredka. The immunity conferred by the anti-pest serum of the Pasteur Institute is rapid but ephemeral. The immunity conferred by Haffkine's prophylactic is slow in establishing itself (8-12 days), but in return it lasts a long time. Calmette conceived the idea of mixing the two fluids, hoping to thus confer upon animals a rapid and lasting immunity. Unfortunately, the immunity thus conferred does not last longer than that acquired by the serum alone. Besredka thought that these poor results might be due to the presence of an excess of the serum in the mixture and that if the latter were reduced to a strict minimum it might be possible to create in the animal a true active immunity, giving all of the beneficial advantages of the added serum.

The microbes thus prepared have received the name of vaccines. Contrary to Haffkine's prophylactic, anti-pest vaccine is deprived of all toxic action.

Mice injected with this vaccine became protected against the inoculation of pest virus within forty-eight hours. Vaccinated soon after or on the same day of inoculation, the mice survived several days, but mice vaccinated with Haffkine's prophylactic became, according to Calmette and Salimbein, during the period preceding the receipt of immunity, less resistant as compared with mice which had not received the prophylactic. Vaccinated mice lost their resistance after five months and a half.

The Plague of Man is Always Preceded by the Plague of Rats.

History. The oldest document which speaks of the relationship between the plague of rodents and that of man is found in the Bible. In the first book of Samuel it is recounted that after the Philistines stole the tabernacle from the Jews, they were punished by God who sent upon them a bubonic epidemic. In order to be relieved of this they were required to make a sacrifice of five golden rats and five golden mice. The ancient Egyptians used the mouse and the rat as a symbol of destruction (Olschanetzky.)

In the writings of Avicenne who lived about the year 1000, one finds the following information: "One of the forerunners of plague is the departure of mice from their burrows and their movements in a drunken state."

In the fourteenth century the black rat came from Asia and scattered over Europe, and became so absolutely unbearable that it was excommunicated by the church. Its arrival coincided with the famous epidemic of black plague. Pallas recounts how the rats crossed en masse the rivers of Russia, and that their passage was considered as a forerunning sign of plague.

Plague on land. The idea of the relationship between the plague of rats and the plague of man which was propagated from, and maintained in, the Orient, began in 1889 when Mahe, sanitary physician at Constantinople, called attention to the fact that epidemics of plague were always announced by a great mortality among rats and mice. He concluded by saying that these two special animals were excellent re-agents for the pest virus and would thus facilitate researches in the future.

After the attention of the public had been attracted to this particular point, it was noted that all of the epidemics of plague were preceded by a great mortality among rats and that the plague, in its march, followed in the tracks of the epidemic which had killed the rats. "We have learned," says Simond, "from many examples, that in all houses where rats go to die of plague, the inhabitants soon become victims of the disease which killed the rodents." In fact he has cited a case where the effects of plague patients carried from an epidemic focus into a clean spot, communicated plague to the rats of the house in which they were deposited which later transmitted the disease to the inhabitants of the quarter.

Plague on board. The important role played by rats in the propagation of plague is more clearly proven on board ships. Here are two examples among a thousand:

(a) Last year the "Senegal" left Marseilles destined for Asia Minor, having on board a large number of tourists who were going to make a scientific excursion in the Orient. But during the passage a suspected case of bubonic plague was found in a sailor. The "Senegal" put about and returned to anchor at the Lazaretto of Frioul without having touched at any port. The suspected case was found to be a true case of plague by bacteriological examination and by inoculation. The patient died soon after his arrival at the pesthouse. No other case of plague appeared. On making an inquiry to discover the origin of the introduction of plague on board one hundred and fifty dead rats and a large number of living rats were found. Some of these animals were submitted to bacteriological examination and found to have plague. The "Senegal" became contaminated in one of its preceding voyages to Alexandria, where plague was raging at that time.

(b) The story of the importation of plague into Paraguay is not less instructive: A ship left Rotterdam for Montevideo with a cargo of rice. During the passage two sailors died of an unknown disease. At Montevideo the rice was transported by the river boat "Centauro" and was discharged eight

hours later at Assumption.' Thirty dead rats were found in the hold of the "Centauro." The day after discharging the cargo two sailors fell sick, and three days later two others became ill. In about fifteen days, an epizootic appeared on land among the rats of the country, and there followed an epidemic of plague, which extended to other cities like Rosario.

Identity of the Plague of Man and the Plague of Rat.

The plague of man and that of the rat constitute a single and identical disease. To establish this identity two sorts of argument may be invoked: first, identity of the anatomical lesions caused by the disease; and second, the identity of the two species of microbes isolated from the bodies of men and rats.

1. Identity of the anatomical lesions. The characteristic anatomical lesion of plague in man is the pest buboe, but this buboe is encountered also in the rat, not only in the case of spontaneous plague but also in the case of experimental plague as when the animal is inoculated in one of his hind feet.

2. Bacteriological identity. The identity of human bacilli and the animal bacilli have been recognized by all bacteriologists but it has been established very largely by Skschivan of Odessa. Besredka thus sums up the researches which were made in Russia:

After two cases of plague in October, 1901, a veritable crusade against rats was organized to the point that by the end of the campaign it was estimated that forty thousand rats were killed. Of this number Skschivan was able to examine anatomically and bacteriologically the respectable number of twenty hundred rats. From all the organs he prepared smears, moreover he made cultures from the blood, the liver and the spleen. The inoculations into guinea pigs were made by the subcutaneous route according to the procedure of Albrecht and Gohn in rubbing the shaven skin with a tampon soaked with the culture and also by smearing it on the nasal mucous membrane (Roux and Batzaroff.)

After the examination of a considerable number of rats, the author found himself in possession of fourteen cultures of plague. After these had been submitted to as complete a study as possible (morphological characters, cultures, virulence, action with anti-pest serum, with agglutinating serum, Pfeiffer's phenomenon) he arrived at the conclusion that there exists absolutely no difference between the bacillus of human plague and that of rat plague. In other words, that they constitute the same organism.

The study of the plague in India has established the fact that the disease may be transmitted to certain animals which live in the vicinity of the native houses. In the cities of the north, for example, where the tribes of monkeys roam at liberty in the streets, plague attacked the monkeys as well as man, and Hankin was able to prove that the bacillus of simian plague was the same as that of human plague. At Hardwar, as it was not possible to destroy the apes because of the native prejudice, it was decided to isolate them in cages in order to bring the plague among them at an end.

Simond has observed cases of plague in the gray squirrel and the tree rat so common in India, but the epidemic was not propagated unless they went to prowl and maraud habitations. The animals which lived in cleared fields in the forest were not attacked. It may thus be said that plague does not attack all animals except accidentally when it comes to them either from man or the rat.

Hypothesis of the origin of rat plague. Let us cast a retrospective eye upon the data which we have acquired in the study of plague. In the first place we have studied human plague. In the second place we have studied animal plague, demonstrated that it is of the same nature as human plague, which it always precedes; in fact, that the plague of man is simply the continuation of the plague of the rat.

In the third place we must now consider what are the conditions under which the rat primarily acquires plague.

The history of human plague teaches us that all the epidemics came from the massive mountains which border Thibet. Once an epidemic is begun it travels over the world, as Simond and Yersin say, like the "Wandering Jew," stopping once in a while, but never permanently fixed. And this is explained very easily, for rats, like men who resist the infection, are immunized and the plague virus, finding no more to attack, disappears in the end. It is thus that all human and animal epidemics extinguish themselves. In Thibet only, the disease seems to be established in a permanent manner. There is its birthplace, its true endemic focus, just as the endemic focus of cholera is the delta of the Ganges, and that of yellow fever is the Gulf of Mexico. Two hypotheses offer themselves to us: one, that the rat takes the disease from his environment; the other, that he receives it from some other animal living in a savage state in these regions. The environment includes both water and earth, in fact, we have to consider three hypotheses in our search for the original rat plague: First, water; second, earth; third, animals.

Water. In this hypothesis the bacillus of plague lives in a saprophytic state in the lakes of Thibet, as the bacillus of cholera lives in a saprophytic state in the delta of the Ganges, and the filth of India, the rat taking the plague by drinking the water of the lakes as man gets cholera by drinking the water of the Ganges.

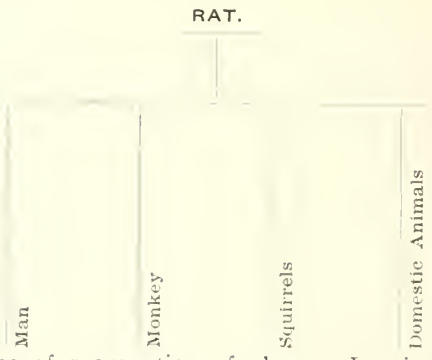
This hypothesis is hardly probable, for if it was to be thus there would be primary localizations in the intestines, which we never find. We have told in the chapter on bacteriology of the difficulties of adaptation of the pest bacillus to aquatic life.

Earth. In this hypothesis the bacillus of plague lives in a saprophytic state in the earth of Thibet as the bacillus of tetanus lives in a saprophytic state in the earth of gardens, in the humus of marshes and so forth, the rat primarily taking plague through abrasion of the skin as we might take tetanus through a wound soiled with earth.

This hypothesis is inadmissible, for if it were so, rats would infect the soil wherever there was an epidemic and plague would finally become endemic throughout the entire globe.

Animals. The hypothesis of an endemic (or more properly, an enzootic, as we are speaking of animals) has greater chances of being true. This enzootic is prevalent in a permanent manner in one species of animals which is found in the mountains of Asia. From this special animal the virus is automatically propagated to the rat and from the rat to man. Plague seems thus to be an accidental disease in the rat as it is in man, and it is necessary to trace further back to discover the animal which acts as host for the bacillus pestis.

Beliatsky and Reschtnikoff, first, and Zabolotny, later, have drawn our attention to a rodent of Mongolia which they believe to be this animal host. This rodent is a sort of a marmot, the Arctomys Bobac or Tarabagane, which presents from time to time lymphatic swellings. The natives hunt it for eating purposes and also on account of its fat. According to these three Russian authors, the inhabitants of certain uncivilized districts of Siberia receive plague directly from this animal. The intermediary to the rat might thus be exterminated. One understands the full importance of this discovery if it should be confirmed. To eradicate forever plague from the surface of the globe it would be sufficient to declare a war of extermination no longer against the rat, which is cosmopolitan, but against this rodent of Thibet, from which the disease spreads to every portion of the globe. To fix the idea better, we will make a sort of genealogical tree of plague.



Modes of propagation of plague. Leaving aside the question of plague in the Arctomys, which is only a hypothesis, we see that the epidemic passes through two stages—the stage of the rat and the stage of man. We should discover how the disease propagates itself in each stage and how plague passes from one to the other. First how it passes from rat to rat, from rat to man and from man to man.

Propagation of Plague.

Propagation of plague from rat to rat. Simond, Ogata and Hankin have expressed the belief that the propagation of plague from rat to rat was made through the intermediary of fleas.

(a) Role of fleas in the propagation of plague. Simond first demonstrated that fleas which were taken from rats suffering with spontaneous plague, contained in their stomachs virulent plague bacilli. In fact, he was able to transmit plague to mice by injecting beneath the skin a trituration of fleas from plague rats.

To demonstrate that infected fleas play a considerable role in the propagation of plague from rat to rat, Simond made the following experiment: Into a large bottle containing a rat recently dead of plague he introduced a small wire cage containing a well rat. The cage was suspended in the bottle so as not to permit direct contact between the sound rat and the cadaver of the plague rat. Nevertheless, the sound rat died of proven plague five days afterward.

This is because the fleas leave the cold body of the plague rat to search everywhere for a home upon some other animal. The contamination would not be explainable but for the intermediary of the fleas. Another peculiarity worthy of note is that sick rats are not able to free themselves from their fleas.

(b) Role of the nasal mucous membrane in the reception of plague. We have seen before that the transmission of plague from rat to rat might be made by the digestive route, the living rats eating the carcasses of dead rats. This is not always the case, for rats fed exclusively upon the cadavers of plague rats contract plague only exceptionally and it is very probable that the infection is received through the nasal passages. Here are some experiments which tend to prove this:

Simond has successfully infected rats by placing their food in a capsule in an infected fluid. The rat, in order to secure the food, was obliged to immerse its nose.

Batzaroff has also obtained these positive results by placing in the same bottle sound rats and rats which have been infected through the nasal mucous membrane. He fed them exclusively on carrots and beets, that is to say, foodstuffs that the rats could not nibble without rubbing it with the nose. The nasal mucus of the plague rats was deposited upon the carrots and contaminated the nasal mucous membrane of the sound rats.

Propagation of plague from rat to man. Plague presents in man three clinical forms, which correspond to the three different routes of penetration: first, bubonic plague, in which the skin was the route of penetration; second, pneumonic plague, in which the route of penetration was by the respiratory tract; the third, intestinal plague, in which the organism entered through the digestive tract. The first forms of the disease are the most frequent; the third form is very exceptional. Let us see what the agents for the transmission of the virus are in each of these forms.

(a) Role of fleas in the transmission of the bubonic form. To demonstrate that fleas play a considerable role in the transmission of plague from rat to man, it is necessary to prove that the fleas which are found upon the rat are also parasite species of man and that plague always follows pricking of the skin.

We thought at first that fleas of rats would not bite man, but the contrary is today admitted by everyone. We have found, in fact, that there exist numerous species of fleas which may be either parasites of man or the rat. Of one hundred fleas found upon rats in Sydney during the last epidemic, Tidswell found the species in the following proportions:

Pulex pallidus	81%
Pulex fasciatus	10%
Pulex Serraticeps	1%
Typhlopsylla musculi	8%

Only the last species is not a parasite of man. One thus sees that 92% of the fleas of rats will bite man. If the bite has been produced by an infected flea it becomes the point of departure of a legitimate case of plague, for numerous experiments have demonstrated that an incision made with a lancet charged with infected serum would give rise to bubonic plague. In this way White fell sick of plague eight hours after having been inoculated in this manner. Ceruti, in trying to immunize man as one would vaccinate against smallpox, killed five out of six inoculated. Dussap made the same experiment upon children, fourteen of whom died.

One sometimes encounters resistant individuals, as Desgenettes at St. Jean-d'Acre, but generally a grave, if not mortal, disease follows the punctures.

When in the course of a plague autopsy, the physician wounds his hand as happened to Dr. Striker at Bombay, he develops always a blister at the point of inoculation and an axillary buboe appears later.

In short, plague is a disease very inoculable by puncture. In man the lymphatic region attacked always indicates the route of penetration of the virus, as the femoral glands indicate the presence of an excoriation upon the lower limbs. In plague patients one should always examine the limb corresponding to the affected lymphatic region very carefully for small blisters, which are the sign of the original inoculation. On interrogating the patient one finds that the development of the blister has always preceded the appearance of the buboe.

One should not confound this primary blister with the blister of pemphigus or with the pustular eruptions which develop occasionally in the course of plague. The primary blister lies always in a region previously sound. The blister of pemphigus develops later, and always upon a region previously edematous.

The primary blister contains the bacilli of plague in a pure state. The infection is probably given in the following manner: The flea bites man by means of his proboscis, which being contaminated, produces a true inoculation, at the same time as the bite.

The primary blister is found on the average of one time out of twenty cases. The reason for this rarity is easily explained by the fact that the more sensitive the animal, the less violent the local action and inversely. The absence of the primary blister indicates a grave case of plague. Its presence, on the contrary, indicates a mild case or of average intensity.

(b) Role of dust in the transmission of the pneumonic form. We have seen in the chapter on bacteriology that the cadavers of dead rats remain virulent during a considerable time in rags and grain.

It is very probable that, in stirring the rags and grain, the laborers contract plague pneumonia. The virulent dust penetrates the bronchi and produces there a focal pneumonia. It is in this way that virulent dust produces laboratory plague pneumonias.

Propagation of plague from man to man. We will follow the same division as we have previously in the consideration of the various factors in the transmission of plague from man to man.

(a) Role of insects. We have already dwelt enough upon the large role played by fleas in the transmission of plague from rat to man, so we will not review it here. The same parasites evidently play an identical role in the transmission of plague from man to man.

Bedbugs constitute a category of parasites much more to be feared because they hide themselves during the day in the wood of the beds and bite man only at night. They must pass to the clothing of another person or hide themselves in the folds of dresses.

Here is the resume of an observation made by Simond in Bombay, which points out the possibility of contagion by bugs.

It occurred in the person of a little girl aged about two years, who was attacked with plague in her cradle during the night. She lived on the first floor of a house until then free from plague, situated outside of the plague stricken quarter. On being called to attend her he found that the mother had taken the child the day before through the contaminated neighborhood. The child presented a right axillary buboe and on the same side near the breast three small punctures which the mother declared had been made by bugs previous to the fever and the buboe.

One understands the great danger of contamination in barracks which are always great places for bugs.

The mosquito has also been accused of carrying the virus from the sick to the well. This mode of transport, if found to be true, is to be greatly feared in warm countries.

Lastly, flies after having been polluted by contact with plague patients may deposit the virus on a sound man at the nasal orifice.

(b) Role of dried sputum. Simond claims that moist sputum does not constitute a great danger of transmission of plague, for he never saw a case of plague develop inside of a hospital in India, for the plague pneumonias were nursed by convalescent patients, or their patients, who did not take any precautions against contact with the linens soiled by the sputum and nasal secretions. It probably is not the same with dried sputum, for the pest bacilli possibly, like the tubercle bacilli, preserve their virulence for a long time if enclosed in an albuminous envelope, gradually dried. The dried sputum of plague patients would be then very virulent, for the pneumonic forms of plague are always fatal.

Certain epidemics of plague are peculiar in that they present a great frequence of the pneumonic form. This type of epidemic comes probably from the non-observance of the most elementary rules of family hygiene.

(c) Role of the hands. Physicians and nurses who are to be in contact with plague patients, particularly those who make the dressings of the plague buboes, should carefully disinfect their hands before leaving the ward. One can easily understand that the hands soiled with the plague bacilli might deposit the virus directly into the nasal orifices or might introduce them into the digestive tract through the intermediary of foods or upon bread or fruit or by inoculation through the scratching of the surface of the skin. Here is a curious observation cited by Valassopoulo during the epidemic of Alexandria in 1899. It occurred in a young girl sixteen years old, four days after having her menses, during which an unbearable pruritis forced her to scratch herself furiously, thus making openings for the infection. Two days later bilateral buboes appeared simultaneously with sanguinolent foetid vulvo-vaginal discharge, which, on being examined, revealed to the exclusion of the gonococcus (the patient was besides a virgin) typical bacilli of Yersin.

Similarly Valassopoulo cites another case where the inoculation was made on a level with the external auditory canal. There followed a serosanguinolent otorrhea with violent pains in the ear which were followed by swelling of the posterior and lateral glands of the neck.

Predisposing Causes.

1. Race. One would presume that the white race would be less sensitive to plague than the colored races. This immunity is not as it appears, for they are especially careful in their habits of hygiene in warm countries and keep their environment as clean as possible. The sensibility of the white race to the pest virus has been, moreover, sufficiently demonstrated in all of the epidemics which have invaded Europe. In India the meat-eating Mohammedans seem less sensitive to the pest virus than the Hindustani vegetarians. In the extreme Orient the Chinese seem, on the contrary, more sensitive than the Annamites. In all probability the question of the receptivity for or against plague is intimately connected with the question of cleanliness and it may be said in a general way that all races are sensitive to the plague virus.

2. Age. Children are more sensitive to plague. The aged, on the contrary, offer more resistance. This depends probably on the condition of the skin at the various ages of life.

3. Sex. Women, on account of their habits of home keeping, pay a heavier tribute than men.

4. Altitude. In houses the ground floor is more exposed than the first floor because of the proximity of the sewers and consequently of the rats. The mountain countries are habitually worse attacked because the inhabitants are poorer and more covered with vermin.

5. Ports of commerce. The great ports of commerce are almost always the point of importation of plague because the rats leave the ship at the same time as the merchandise; for example, the beginnings of the epidemics which broke out in London, Liverpool, Marseilles, Hamburg, etc.

Clinical Study of Plague.

1. Incubation. Authors are not uniform as to the duration of the incubation of plague. After inoculations which have been made with a lancet, it varies from thirty-six hours to five days. Some authors think that it may be as long as nine days.

The individual in the incubative stage of plague appears to be in excellent health up to the moment of the invasion; that is to say, up to the moment when the first symptoms of the disease appear. At other times, on the contrary, the patient complains of stiffness in the joints or unusual lassitude or perhaps an intense cephalgia.

2. Classification of the clinical forms. One sees always two clinical forms of plague; the form with bubo and that without. The last form may be subdivided into three secondary forms.

1. Bubonic plague.
2. Plague without bubo.
   - (a) Septicemic form.
   - (b) Pneumonic form.
   - (c) Intestinal form.

We may also classify the clinical forms of plague according to the route of penetration of the virus. We may thus distinguish three principal forms of the disease.

1. Cutaneous pest.
2. Pulmonary pest.
3. Intestinal pest.

Cutaneous plague is the more common form, but it presents various degrees of virulence. Sometimes it proceeds normally; sometimes, on the contrary, it is fulminant; sometimes benign.

We may thus divide the cases of plague in the following manner:

Cutaneous plague.
(a) Fulminant form.
(b) Bubonic form.
(c) Ambulatory form.

Cutaneous Plague. We have seen, according to the researches of Simond, that the skin is the usual route of penetration of the virus: The enlarged glands indicate clearly the lymphatic territory in which the inoculation has been made. But according to the receptivity of the subject, according to the virulence of the pest bacilli, the point of inoculation may be imperceptible or on the contrary very apparent in the form of a primary blister. The absence of a local lesion indicates, according to the general rules of bacteriology, a soil very susceptible to plague. It is thus that the anthrax bacillus inoculated into a guinea pig kills the animal without producing a local lesion. In man, on the contrary, who is more resistant to anthrax than the guinea pig, a malignant pustule is formed, indicating that it was at that point that the virus penetrated the organism.

The plague virus acts in the same manner in man: if it attacks a susceptible individual it is without local manifestation: if it attacks a more resistant individual, it is accompanied with a local reaction which may simulate a true malignant pustule.

Thus one remarks a very variable receptivity between individuals when one is doing vaccinations. Sometimes there is formed a varioloid pustule at the point of inoculation. Perhaps it does not form at all and in the latter case the inoculated disease is always grave, sometimes fatal. It is the same with cutaneous plague which is a true disease of inoculation.

(a) Fulminant or Septicemic Form: The disease breaks out quickly with an intense chill and a violent hyperthermia of forty or forty-one degrees; the cephalalgia is very acute and is accompanied with an extreme weakness, trembling of the voice, delirium and vertige. The patient staggers in walking like a drunken man, the skin is dry, the face injected, the pulse small, frequent and irregular. At this stage delirium is followed quickly by an adynamic phase, the respiration is embarassed and the patient dies in about twenty four or twenty-six hours without having presented any of the symptoms of plague, buboe, pustule or petechiae.

Observation 1. (Simond) Subject Tho, aged 25 years. This man has been sick five days. Nevertheless, he has not been confined to bed. The night of this observation, on returning from a walk he was seized with a great weakness and later presented delirium. At the time when I was called to see him, he was in a state of prostration, from which he emerged at intervals to speak a few disconnected words and move his limbs. The respiration is difficult, the larynx obstructed with mucus, which he evacuated with difficulty by frequent expectoration. The skin is dry, very hot and does not present a rash. There is no adenitis, neither in the groins nor the axillae nor the neck. The tongue is slightly coated and moist, the axillary temperature is 41.5°, the pulse is filiform, the heart beats 160 times per minute. The abdomen is not distended, there has been absolute constipation for several days and anuria during this evening. The liver and the spleen are apparently normal. Death supervened three hours after my examination.

(b) Bubonic Form. The beginning is rapid as in the first case, but the patient in spite of an extreme weakness preserves his intelligence at least during the first days. The characteristic symptom of this form is the adynamia. The pathognomonic sign is the bubo, but besides the adynamia and the adenitis, one frequently observes other phenomena as pustules, petechiae and gangrene of the extremities. The adynamia is usually very pronounced and for this reason plague may be considered as the most brutal of typhoid diseases.

The bubo is to plague what the ulceration of Peyer's patches is to typhoid fever. It is found in 75% of cases. Sometimes it is single, sometimes multiple. According to the statistics collected by Monneret, in 140 cases of plague, 125 times there was one bubo, 13 times there were two, once there were three and once six.

The buboes are said to be external when they protrude above the level of the skin. On the contrary, they are called internal when they are placed in the abdominal or thoracic cavities.

As to the location of the buboes here are the results given by the statistics of Cabiadis: groin, 710 cases; axilla, 406 cases; neck, 98; multiple localization, 122. Exceptionally, the buboes are localized in the popliteal space and at the elbow.

In the order of gravity, we find that the buboes in the cervico-parotid region entail the heaviest mortality; next come the axillary buboes which are complicated with a secondary plague pneumonia: next multiple buboes, and lastly inguinal and femoral buboes.

Usually fever is the first symptom of plague. It appears abruptly and mounts immediately to 39°C, 40°C or may perhaps rise as high as 42°C. The glandular pain does not appear for several hours afterwards. Sometimes the two symptoms manifest themselves simultaneously but it is rare that the bubo precedes the fever.

In a certain proportion of cases which Simond reckons at about one-twentieth, that is to say in 5% of cases, the first apparent sign of bubonic plague is a lenticular spot resembling the bite of a flea or a bedbug. This spot at first occasions itching, next follows pain and the formation of blister or pustule called primary. These primary pustules are rarely multiple. They are usually solitary and a few hours after their appearance the corresponding glandular region begins to enlarge and the fever to light up.

The primary blister persists during the entire duration of the disease, sometimes remaining lenticular, sometimes spreading. In some of the cases the primary blister causes a necrosis of the adjacent tissues and gives rise to a carbuncle.

The primary blister should not be confounded with the pemphigoid blisters or the pustular eruptions which develop in the course of plague. The primary blister remains always in a region originally healthy. The pemphigoid blisters develop later and usually in a region previously oedematous.

The primary blisters contain the bacilli of plague in pure culture thus indicating that the subject in whom they are evolving presents a certain resistance to the pest virus.

The bubo is usually about the size of a walnut though when the chain of glands is involved the swelling is considerably larger. At this time one observes two modes of termination, resolution or suppuration unless death interrupts the course of the disease. Termination by suppuration is much more frequent than termination by resolution. The pus does not offer any peculiar characteristic. The pest bacilli are very abundant during the first few days, becoming more and more rare in proportion as the suppuration is prolonged.

The adenitis frequently offers a characteristic evolution which distinguishes it from common adenitis. After a few days of suppuration the gland may be thrown out entire as a sphacelus, leaving in its place a solution of continuity of greater size than that of the gland.

The appearance of the buboes sometimes produces

a rapid fall of temperature but it is not a true remission as after the eruption of smallpox. The appearance of the buboes is no longer considered a true critical eruption as has been described by certain authors. The bubo is only a stage of the disease, but when suppuration takes place one knows he has to deal with an attenuated virus capable of producing pus but incapable of making a septicemia. In the same way one may say, in a general way, that all glands which suppurate indicate a favorable termination. The cicatrization of the buboes is made with rapidity, at least when there is grafted upon the plague infection no extraneous complication as phagadena, erysipelas, etc.

The bubonic form of plague is the form which is most subject to complications because it evolves the most slowly. The other forms of plague are so much more grave that they usually kill the patient before the complications have had time to be produced.

One of the most severe complications which may appear in the course of bubonic plague is pneumonia, or rather, secondary plague broncho-pneumonia. This is usually the result of the spread of the plague inflammation by contiguity and consequently is encountered more frequently in the case of cervical or axillary bubo. From the moment that this complication manifests itself the prognosis is much more gloomy, the plague evolving more rapidly without having in the meantime the explosive features of a primary plague pneumonia. If the broncho-pneumonia is not very extensive the patient may recover, but one must consider this complication very grave, producing as it does a mortality of more than eighty per cent, according to Simond.

Plague conjunctivitis is sometimes simple and sometimes complicated with an ulcerative keratitis, with purulent degeneration of the eye. It is due to the presence of pest bacilli upon the surface of the conjunctiva.

The carbuncles may be primary if they precede the appearance of the bubo and are not in this case, as Simond maintained, very violent true primary blisters; at other times they are secondary and do not appear until after the adenitis as complications of pemphigoid eruptions.

(Concluded in September.)

MALCOLM MORRIS KNIGHTED.

Many will remember Malcolm Morris, now Sir Malcolm Morris, who delivered a most interesting course of lectures on Diseases of the Skin under the Lane endowment at Cooper Medical College. His friends will be pleased to know that King Edward on January the first last, dubbed him a Knight Commander of the Royal Victorian Order. Malcolm Morris is now, therefore, Sir Malcolm Morris, K. C. V. O.

This event is particularly gratifying to men engaged in the specialty of Cutaneous medicine, as it is the first time one of their number has been knighted in England for distinguished medical services. It is true that Erasmus Wilson was also knighted, but his title came, not on account of scientific or medical work, but because of the donation of the Egyptian obelisk which now stands on the Thames embankment. This is obviously a different affair.

In another way this deserved honor points a lesson. Sir Malcolm Morris is not alone an excellent man in his specialty, but he is a clever physician in a general sense, and for a long time was known as the able editor of The Practitioner. In addition to this, Sir Malcolm is a man of wide general literary culture. All these abilities congrue to a well balanced judgment, as in no specialty is a knowledge of the every day working of the body so necessary as in diseases of the skin, and general culture, while not absolutely essential for the cure of disease, is of importance to the medical man in whatever sphere his activities may lead, in developing the human side of him. The most widely respected and beloved physicians have always been those who, to their special knowledge have added an intimate acquaintance with the field of general literature, as for instance, the late Professor Kussmanl, and in the present day, Wm. Osler. We feel, therefore, that King Edward in selecting Sir Malcolm for the high honor he has conferred upon him, has done a graceful and wise act.

D. W. MONTGOMERY.

FUNGUS COCCIDIOIDES—THE CALIFORNIA DISEASE.

Since 1892 some eighteen cases of this disease have been reported and as all but one of them have lived at some time of their lives in the San Joaquin Valley, this has been very appropriately called the California Disease. Dr. Kellogg of Bakersfield, Kern County, California, has seen more of these interesting cases than any other one doctor and at a meeting of the San Joaquin Valley Medical Society held in Tulare recently, he brought one of the victims of this disease before the meeting, giving the history of this case, with such treatment as had been tried, and reviewed such instances of the malady as he knew of. At his request Rr. Ryfkogel presented the findings with the microscope and read a paper on the disease.

Those who have met with cases of this disease feel sure that many suffering therefrom fail to have their sickness properly diagnosed (it is probably called tuberculosis) and on this account desire to call the attention of the profession to its symptomatologoly. Dr. Ryfkogel's paper was printed in the State Journal, June, 1908.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

President Roosevelt has accepted the presidency of the International Congress on Tuberculosis. His letter to Dr. Lawrence F. Flick, chairman of the Committee of Arrangements for the Congress, follows:

The White House, Washington, May 12, 1908.

Sir—It is with great pleasure that I accept the presidency of the "International Congress on Tuberculosis" which is to meet in this city on Sept. 21, 1908, and extend its session to Oct. 12, 1908. Official duties, however, may prevent my presiding at the initial meeting of the Congress, in which case I will deputize Secretary Cortelyou.

The importance of the crusade against tuberculosis, in the interest of which this Congress convenes, can not be overestimated when it is realized that tuberculosis costs our country two hundred thousand lives a year, and the entire world a million lives a year, besides constituting a most serious handicap to material progress, prosperity and happiness, and being an enormous expense to socicty, most often in those walks of life where the burden is least bearable.

Science has demonstrated that this disease can be stamped out, but the rapidity and completeness with which this can be accomplished depend upon the promptness with which the new doctrines about tuberculosis can be inculcated into the minds of the people and engrafted upon our customs, habits and laws. The presence in our midst of representatives of world wide workers in this magnificent cause gives an unusual opportunity for accelerating the educational part of the program.

The modern crusade against tuberculosis brings hope and bright prospects of recovery to hundreds and thousands of victims of the disease, who under old teachings were abandoned to despair. The work of this Congress will bring the results of the latest studies and investigations before the profession at large and place in the hands of our physicians all the newest and most approved methods of treating the disease—a knowledge which will add many years of valuable life to our people and will thereby increase our public wealth and happiness.

The International Congress on Tuberculosis is in the interest of universal peace. By joining in such a warfare against a common foe the peoples of the world are brought closer together and made to better realize the brotherhood of man; for a united interest against a common foe fosters universal friendship. Our country, which is honored this year as the host of other nations in this great gathering of leaders and experts and as the custodian of the magnificent exhibit which will be set up by the entire world, should manifest its appreciation by giving the Congress a setting worthy of the cause, of our guests, and of ourselves. We should endeavor to make it the greatest and the most fruitful Congress which has yet been held, and I assure you of my interest and services to that end.

With expressions of appreciation for the compliment conferred in extending the invitation to become president of the Congress.

Very respectfully,
THEODORE ROOSEVELT.

Dr. Edward L. Trudeau has been elected honorary president of the Congress, and Vice-President Fairbanks, Speaker Cannon and the governors of the states have been asked to serve as vice-presidents. The list of vice-presidents is not complete, but those who have agreed to serve in that capacity include Vice-President Fairbanks, Speaker Cannon, Governors Gillett of California, Buchtel of Colorado, Woodruff of Connecticut, Deneen of Illinois, Hanly of Indiana, Cummins of Iowa, Hoch of Kansas, Willson of Kentucky, Cobb of Maine, Crothers of Maryland, Warner of Michigan, Johnson of Minnesota, Noel of Mississippi, Folk of Missouri, Floyd of New Hampshire, Fort of New Jersey, Hughes of New York, Glenn of North Carolina, Burke of North Dakota, Harris of Ohio, Chamberlain of Oregon, Stuart of Pennsylvania, Ansel of South Carolina, Patterson of Tennessee, Cutler of Utah, Proctor of Vermont, Swanson of Virginia, and Dawson of West Virginia.

The German committee of arrangements for the Congress has a membership of over one hundred and fifty. The list forwarded to the Secretary-General by Dr. Nietner includes some of the highest dignitaries of the empire. Dr. von Bethmann-Hollweg, the president of the committee, is the Imperial Secretary of the Interior and the Vice-President of the Prussian Ministry of State. The vice-presidents are Count von Lerchenfeld, royal Bavarian State Counsellor and Ambassador Plenipotentiary, and Baron von Knesebeck, royal master of ceremonies and Chamberlain to her majesty the Empress; and the treasurer is Ernst von Mendelssohn Bartholdy, a member of the Prussian Diet. Another distinguished member of the committee is Victor, Prince of Hohenlohe and Corvey and Grand Duke of Ratibor. Drs. von Leyden, B. Frankel, Orth, Baginsky, and Nietner constitute the central commission, and others named on the list include Dr. Robert Koch, Dr. Emil von Behring, Dr. A. Frankel, Dr. Richard Neisser, Dr. Lydia Rabinowitsch-Kempner, Dr. G. Pannwitz, Dr. Schottelius, Dr. Abb, secretary of the Civil Cabinet of the Emperor at Berlin; Dr. Bumm, president of the Imperial Board of Health, and Dr. Schjerning, general chief of the Army Sanitary Corps and of the Medical Division of the War Department.

A committee of sixty-four members has been appointed to arrange for the part Belgium will take in the Congress and in the exhibition to be held in connection with it. M. Beco, the Governor of Brabant, is honorary president and Dr. Dewez, President of the Belgian Anti-Tuberculosis League is president of this committee. Other members of the committee are M. Velghe, Director-General of the Ministry of Agriculture; Dr. Van Ryn, Secretary General of the Belgian Anti-Tuberculosis League; Dr. Bordet, director of the Pasteur Institute at Brussels; M. R. Waracque, Dr. Cousot and Dr. Descamps, all of whom are members of the Chamber of Representatives; Dr. Devaux, Inspector General of the Department of Health and Hygiene; Dr. Courtoy, president of the Provincial Medical Commission of Namur; Dr. Dethier, director of the Anti-Tuberculosis Dispensary at Namur, and Dr. Wouters, director of the dispensary at Louvain.

FIFTH PAN-AMERICAN MEDICAL CONGRESS

The Fifth Pan-American Medical Congress will be held this year in Guatamala from August 5 to August 10. A large attendance is expected. The following are the officers of the Congress:

President—Dr. Charles A. L. Reed.

Vice-President—Dr. A. Van Der Veer.

General Secretary—Dr. Ramon Guiteras, 75 W. Fifty-fifth street, New York.

Secretaries of sections:

sections:

General Medicine—Dr. Judson Daland, Philadelphia.

General Surgery—Dr. Emmet Rixford, San Francisco.

Hygiene, Demography and Epidemiology.—Dr. T. Darlington, New York.

Nervous and Mental Diseases — Dr. Charles Hughes, St. Louis.

Dermatology and Syphilography—Dr. Harry E. Alderson, San Francisco.

Tropical Medicine—Dr. John Swan, Philadelphia.

Military Sanitation—Dr. L. L. Seaman, New York.

Ophthalmology—Dr. H. Bert. Ellis, Los Angeles.

Nose, Throat and Ear—Dr. W. S. Bryant, New York.

Pathology and Bacteriology—Dr. Walter Chase, Boston.

Gynaecology, Abdominal Surgery and Obstetrics—Dr. H. P. Newman, Chicago.

Children's Diseases—Dr. C. G. Kerley, New York.

UNIVERSITY OF CALIFORNIA, MEDICAL DEPARTMENT, ALUMNI ASSOCIATION.

At the University of California Hospital, April 6, 1908.

Meeting called to order at 8:30 p. m., Dr. Harold P. Hill presiding.

Cases shown from the various services in the hospital.

Dr. Herbert Moffit presented:

1. Case of Addison's disease.
2. Case of chronic hydrocephalus, with draining of cerebro-spinal fluid through nose.
3. Case of myoclonia multiplex.

Dr. T. W. Huntington exhibited a case of popliteal aneurism due to trauma and reviewed the various available operative measures.

Dr. D. W. Montgomery read a paper on "The Itch."

Meeting at U. C. Medical Dept. Hospital, June 15, 1908.

Meeting called to order at 8:45 p. m., Dr. Harold P. Hill presiding.

Cases shown in the various services of the hospital.

Dr. Spaulding showed two cases of inanition and

demonstrated the use of a simple and effective incubator and also the method of feeding such cases by gavage. Two cases of hereditary syphilis were also shown.

Dr. Herbert Allen exhibited a case of esophageal ulcer and demonstrated the use of the esophagoscope.

Dr. Bine showed a case with very marked ophthalmo-tuberculin reaction.

Dr. Ryfkogel presented a case of spindle cell sarcoma of the humerus and scapula and described the interscopulo-thoracic operation which he had performed.

Dr. Ryfkogel showed specimens of thyroid which he had removed from a case of goitre.

Dr. Berndt exhibited a spleen weighing ten pounds, which he had recently removed from a case of splenic leukemia, the patient having survived the operation and at the present time being in fairly good condition. The prognosis, however, is very doubtful.

It was announced that in the future these meetings would be almost entirely clinical. The president announced that those desiring to exhibit cases or present material should notify Dr. H. E. Alderson, chairman of the executive committee.

EYE, EAR, NOSE AND THROAT SOCIETY.

Meeting of May 21, 1908.

Paper by Dr. C. S. G. Nagel, "Pre-retinal Hemorrhage with Report of a Case."

Paper by Dr. W. F. Blake, "The Early Recognition and Treatment of Squint."

Paper by Dr. L. C. Deane, "Thrombosis of Superior Longtitudinal and Lateral Sinuses, Treated by Opening Through the Torcular Herophili Complicated by Pregnancy; Recovery."

This paper presented several features of interest. It was a case of uncomplicated sinus thrombosis, arising from a chronic purulent otitis media. The infection was transmitted directly through the inner plate from the mastoid to the sinus. The jugular vein, sigmoid, lateral and superior longitudinal sinuses and torcular herophili were involved.

The jugular vein was completely exsected, the lateral and sigmoid sinuses were obliterated through the mastoid wound, also the superior longitudinal sinus by opening over and through the torcular herophili. The latter procedure was unique in that after consulting several world's authorities in this country and in Europe, and reviewing the literature of the subject, no similar case could be found where the torcular herophili had been opened directly by trephine through the occipital protuberance and the confluent sinuses treated by this route. Such treatment would ordinarily be considered fatal, as the torcular herophili receives the flow of practically all the venous circulation of the brain. I was enabled by careful manipulation to divide the venous stream into two, allowing the left side of the torcular, into which flows the straight and occipital sinuses, to remain patulous while curetting and packing the right side, including the entire superior longitudinal sinus. Twice following this was the left side opened, allowing free bleeding for the space of a few seconds, and extracting each time from twelve to fifteen ounces of blood. This dangerous procedure was resorted to for the purpose of clearing the left channels of thrombic material, as the temperature variations were unaffected even after the sinuses and jugular vein of the right side had been obliterated. This I believe to be directly accountable for her recovery.

The temperature was unusual, though typical of septicemia from thrombosis, in that for twenty-four days it rose daily from normal to as high as 107.4 on two occasions, and always descending to normal again in a few hours.

An uncontaminated specimen of her blood was taken from the median cephalic vein. It was found to contain a pure culture of staphylococcus pyogenes aureus.

During her illness she carried a five to six-months-old fetus, later giving birth to a healthy child.

Following discussion on paper by Dr. Deane:

Dr. Barkan: The case is such an exceedingly interesting and surprising one that we require time in which to think it over. The doctor himself has had many months in which to work on it, and I have tried to follow fairly closely his account of the case. I know of no case of my own which would come at all near the experience Dr. Deane has had. It struck me that the repeated rise of temperature to the height of 107.4° once is appalling. It is hard to conceive of how a woman could get on with such a temperature. This is one feature which is surprising. Another feature that is peculiar is that the doctor did not open the middle ear and make the radical operation afterwards. That all these striking symptoms of infective thrombosis could be followed without regard to the disease in the middle ear is a rather interesting and striking point. The taking of blood from the case and no particular symptoms showing themselves on the left side from this continuance of the thrombus in the left lateral sinus is surprising. One can but follow such a case and feel encouraged, and certainly this experience of Dr. Deane is most invaluable. It must have been an appalling task. The difficulties which Dr. Deane described having met with in opening the bone, necessitating the use of the gouge and hammer, brings to my mind my experience and that of many of you—that in such a case it would have been an easier means of accomplishing the opening through that thick bone by using MacEwen's electric burr. I merely suggest this as a means which would have facilitated work considerably.

Dr. Deane: I think that maybe the circular saw could be used and the burr, but the burr would have certain limitations. You do not know exactly how far you can go with it. The idea was, in this case, to reach the dura mater, and one would have to stop with the burr before reaching that and take up the chisel.

Dr. Barkan: That is just where Dr. Deane is mistaken with regard to the use of the burr. The burr enables one to go right to the dura mater without fear of hurting the dura mater. There is no other instrument which will enable you to penetrate into the depth with such certainty as the burr. Every moment you can see just what is before you. I am, however, merely suggesting the use of the burr, not fault-finding.

Dr. Cohn: I wish to voice my admiration for the way this case was handled and in regard to the results obtained. It is a unique case so far as the knowledge of most of us goes. I was present at most of his operations on the case, and voice the sentiment of those present to-night that it was skillfuly handled. It was really a remarkable case. It is always a matter of congratulation if the limit of the operable field is extended, and Dr. Deane has extended this. It was at my suggestion that Dr. Deane wrote to many authorities doing this kind of work, and all replies were negative with regard to their having had this experience. In our struggles with these cases we are able to extend the work. As you have gathered from Dr. Deane's paper, it was appalling to see the terrific destructions which had taken place and at the same time see the ease with which Dr. Deane moved around from sinus to sinus, as if it were child's play.

COUNCIL ON PHARMACY AND CHEMISTRY.

Capsules Glycerphosphates Comp. (H. K. Mulford Co.) will be added to the list of new and non-official remedies approved by the Council on Pharmacy and Chemistry, which will be published in the Journal July 4.

Isoform Powder (Koechl & Co.) having been withdrawn from the market, has been omitted from the list of articles accepted for new and non-official remedies, at the request of the American agents.

Investigations made under the direction of the Council having demonstrated that the claims made for Isopral (Farbenfabriken of Elberfeld Co.) are not justified by the facts, the Council has voted to omit this article from the list.

ALAMEDA COUNTY.

The meeting was called to order at 8:30 o'clock; Dr. E. M. Keys in the chair.

The program of the evening was conducted by Dr. Jas. Hogan of Vallejo and his assistant, Mr. West, giving a complete example of preparing and standardizing the various vaccines; showing many details of laboratory technic; greatly simplifying the work as well as the paraphernalia.

An ingenious device for regulating the heat of an incubator with an electric light was shown, as well as the method of making pipettes and capsules for the emulsions and solutions. The technic of the entire process was fully covered. In conjunction with the above demonstration, Dr. Hogan read the following paper:

Personal Experience with Bacterial Vaccines.

At the June meeting of the Northern California District Medical Society, held in Napa last year, I read a paper on the "Opsonic Index," and gave a practical demonstration of Wright's technic.

At that time I was completely "opsonized" and hoped that by the time a year had passed I would be able to show tables of indices taken in all the cases I have had under treatment; but I am sorry to say that I have not been able to obtain satisfactory indices in any case and have been compelled to carry on the work from a clinical standpoint, getting marvelous results in some cases and failures in others.

This was very discouraging at first, but as the majority who are working in this field report the same trouble I felt that the failure is not all my fault.

Some expert bacteriologists claim that it is not possible to get a satisfactory index at all, others claim to do so in every case, and while my experience would put me in the same class with the former, I wish that I had the ability of the latter, as I believe that there is no better way to regulate your dose and space the intervals than by the aid of the opsonic index.

I would have been tempted to throw up the work in the start if it had not been for the fact that my first case was one of colon bacillus infection of the kidney of an acute type in an old lady who had been treated with all the urinary antiseptics, etc.

I found a pure culture of colon b.; made a vaccine; tried for several days to get satisfactory indices, and in desperation gave an initial dose of fifty million. The result in this case was a clearing up of all the symptoms in a short space of time.

The literature on this subject has assumed such enormous proportions that at the present time it would take one's whole time to follow it. And so, instead of giving extracts from the literature, I will simply give you a statement of facts from the knowledge that I have acquired in ten months' work, fortified by the results of others.

I will refrain from touching on any of the theories of opsonic work, as splendid articles have appeared in the journals from time to time by such prominent workers as Wright, Ross, Allen, Hekton, Hollister and others.

It is the consensus of opinion that the best results are obtained from a vaccine made by isolating the organism from the patient's own lesion. There are some conditions that may mitigate against this, notably:

1. Where the isolation of the organism is difficult and tedious, as in tuberculosis.
2. Where the infection may be so acute that the loss of time consumed in making a vaccine would put the patient beyond help.
3. Where the infection is so chronic that the virulence of the organism has been greatly reduced. An example of this is in chronic gonorrhea.
4. Where you are dealing with organisms of definite type—as bacillus septus, and the pneumococcus.

If any of these conditions exist the use of a stock vaccine will have to be resorted to. I have had no experience with the use of stock vaccines, excepting in tuberculosis. Here we use the method of Wright, using Koch's T. R., diluting it until 1 c.c. equals 1-500 mg. of dried tubercle bacilli, and using from 1-2000 to 1-1000 mg. at a dose. I have no doubt that better results will be obtained in the use of a personal vaccine even in these cases.

Preparation of vaccine.—It is best, first, to determine whether you are dealing with a pure or a mixed infection. In case it be a mixed infection you will have to plate out the culture and isolate your organism in that way. Finding that you have a pure culture, select the medium that it best grows upon and transfer it to a broad surface, so that you will have a good growth. Taking a twelve to twenty-four hour growth, you are ready to start your vaccine. Add enough 1-10 per cent saline solution to cover your field of growth and by rubbing with a platinum loop emulsify the growth.

Pour the emulsion into a centrifuge tube and add enough saline solution to measure 5 c.c. Whirl for about three minutes, when all the large clumps will have been sedimented.

The centrifugated emulsion is now carefully poured into a test tube, taking care not to disturb the sediment; in the test tube also place about fifty small glass beads, draw out upper end of test tube in a Bunsen flame and seal. A thorough shaking will cause the beads to break up any small clumps not thrown down by the centrifuge. The emulsion, now called the concentrated vaccine, is placed in a steam sterilizer and a temperature of 60° C. maintained for one hour. This is sufficient to arrest all growth in the tube. The next step is to standardize the vaccine. This is done by taking equal volume with blood in a "capillary pipette." A mark about ⅝ inch from end of pipette is made, representing the unit of volume.

First draw up into the pipette four or five volumes of 2 per cent sodium citrate solution, then a small volume of air, next a volume of fresh blood, another volume of air, and finally a volume of emulsion. Mix by alternately drawing in and expelling the mixture on a clean glass slide. Divide into three parts and make smears upon clean slides. Dry smears in air and stain with any good blood stain, such as Leischman's. We are now ready to count. This is accomplished under a 1-12 inch oil immersion lens. Count the number of red blood cells and bacteria in each field, or until 500 red cells have been counted. Allowing five million red blood cells to the cubic millimetre, the product of five million and the number of bacteria counted, divided by 500, or the number of red blood cells counted, will equal the number of bacteria in one cubic millimetre of the vaccine. This, multiplied by 1000, will equal the number in one cubic centimetre. Having found out the number of organisms per c. c. of the concentrated vaccine, dilutions are now made to any de-

sired strength, such as 100, 250, and 500 million per c. c., for convenience in administration. The vaccine is now lysolized by adding sufficient lysol to equal 0.25 per cent.

Sufficient vaccine for individual doses is now placed in glass tubes and the ends sealed off in a flame. The vaccine is now rendered sterile by maintaining a temperature of 60° C. for one hour, after which it is ready for use.

W. L. B.—Age, 24. Occupation, fireman. Father and mother alive and well. Enjoyed the best of health until March 15, 1908, when he received an infected wound of the back of right wrist. The inflammation extended to the back of right hand. Wound discharged pus for three weeks. On the 5th of April patient complained of pain in the region of the right kidney. The pain became so great that on the 8th he had to give up and go to bed. Patient was brought to my hospital on the 27th of April, 1908. Condition: Pulse, 100; temperature, 100° F. General condtion poor; had lost 21 lbs. weight since receiving wound in hand; had had night sweats for the previous eight days; examination showed great tenderness in the region of right kidney. Blood count showed reds 4,872,000, whites, 12,000, polys. 86%, lymphocytes 14%. Urinalyses showed a few leukocytes but not t. b. Sputum analysis failed to showed t. b. Opthalmo reaction was negative. Blood culture failed to reveal any organism. Examination of feces was negative for t. b. Patient showed all signs of pus intoxication. A diagnosis of abscess of the right kidney was made. On the first of May operation revealed two abscesses in the right kidney. The kidney was extirpated. An agar slant inoculated with pus from the interior of the kidney showed staphylococcus pyogenes albus in pure culture. The patient made a good recovery from the shock of operation, the kidney secreted normal urine in normal amount, but the patient still showed signs of a severe general infection, while the temperature ranged from 100° to 103° F. A vaccine was prepared from the culture of staphylococcus and on the 7th of May a dose representing 250 million cocci was given. No apparent clinical change was noticed, although the patient stated he felt better. On the 9th of May a dose representing 500 million cocci was given. On the 12th of May a dose representing 750 million cocci was given. No reaction, but patient still stated that he felt better. On the 23d of May a dose representing one billion cocci was given. On the 5th of June a dose representing one billion cocci was given, after which a rapid convalescence followed. We know that some cases of pyemia recover, but this seemed such a hopeless case that I feel the vaccines had a great deal to do with his rapid recovery.

J. B. McC.—Age, 46. Occupation, proprietor beer bottling establishment. Single. Father and mother still living and well. Average weight, 174 lbs. Had two attacks of pleurisy, the last being in April, 1907. Temperature sub-normal. Coughs some, but cough is not troublesome. Expectoration, profuse. Weight, 152 lbs. General condition poor. Pleurisy painful at times. Tubercle bacilli are present in the sputum in medium numbers. Physical signs: Dullness left side. Case diagnosed as pulmonary tuberculosis. Presented himself for treatment 2nd August, 1907, and an injection of 1-1000 mg. of tuberculin T. R. was given, to be repeated at intervals of ten days each. A marked reaction was noticed after the first five doses, also a slight reaction after the tenth dose. After the third injection there was a decided improvement in the patient's general condition, also the pleurisy had improved, but the patient complained of profuse expectoration.

A microscopic examination of sputum showed a great decrease in the number of tubercle bacilli, but there were many pus cells and staphylococci present. A specimen of sputum was received into a sterile jar and carefully washed in sterile water. A loopful was taken from the center of the sputum and an agar slant inoculated. A rich growth was obtained and after plating the staphylococcus pyogenes albus was isolated. From this a vaccine was made, and on the 12th of November a dose representing 100 million cocci was given, to be continued at intervals of ten days, in addition to the tuberculin.

Patient continued to improve and on the 1st of January the weight was normal and the tubercle bacilli absent from the sputum. By March, 1908, the sputum was well cleared up and expectoration very scanty. At the present date the patient "is the picture of health," has neither cough, pleurisy, nor expectoration and sleeps and eats well.

A. S.—Age, 53. Occupation, wharf builder. Single. Father died of old age. Mother living and well. Normal weight, 190 lbs. Had pneumonia in January, 1906, being sick three weeks. Had a hemorrhage in November, 1906, and started to lose weight. Had more hemorrhages through the winter, six in all. Presented himself for treatment in November, 1907, one year after date of first hemorrhage. Weight, 165 lbs., 25 lbs. less than normal. Much debilitated. Sputum contained tubercle bacilli in large quantities. Running an evening temperature of 99.5° F. Expectoration medium. Cough not troublesome but greaetr in morning. Physical signs: Both apices. A diagnosis of pulmonary tuberculosis was made. On the 19th November a dose of 1-1000 mg. of tuberculin T. R. was given, followed by a marked reaction. Since that time the tuberculin has been given in the same dosage at intervals of ten days. There has been no reaction after that of the first dose and the patient has improved slightly. Patient's sputum still contains tubercle bacilli, but he has gained nine pounds in weight, and feels stronger. He sleeps well, has a good appetite and is able to be about town.

J. S.—Age, 31. Occupation, drygoods clerk. Both parents alive and well. Normal weight, 165 lbs. First seen 10th October, 1907. History of a hemorrhage three years before, followed by a cough. A year later had a severe pleurisy of six weeks' duration, with loss of weight and great debility. Regained lost weight, but the following year suffered from another attack of pleurisy and has had acute attacks at intervals ever since, with loss of weight and night sweats. In June, 1907, was so debilitated that he had to quit work and since that time has been living on a ranch. General condition very poor. Weight, 122 lbs. Tubercle bacilli present in sputum in large numbers. A very distressing morning and evening cough with an evening rise of temperature. Large area of dullness at both apices. Diagnosis of pulmonary tuberculosis was made. On the day that the patient was first seen his evening temperature was 103.4° F. and he was ordered to bed until the temperature declined.

On the 14th of October, the temperature being normal, he was given 1-1000 mg. of tuberculin T. R., to be repeated at intervals of ten days each. A marked reaction followed the first injection and the patient regained his lost appetite.

The temperature continued normal and the patient regained several pounds in weight, but after the third injection had been given, in spite of the apparent improvement, the patient decided to go home to Canada and has since not been heard from.

I. B.—Age, 28. Occupation, butcher. Married, no children. Father died of phthisis; mother alive and well. Normal weight, 172 lbs. Had two attacks of hemoptysis with blood-streaked sputum in the interval. Last attack in June, 1907. Weight, 157 lbs. Average temperaure sub-normal. Tubercle bacilli present in sputum. Physical signs other than loss of weight, none. A diagnosis of pulmonary tuberculosis was made and on 2nd August, 1907, patient commenced treatment. A dose of 1-1000

mg. of tuberculin T. R. was given, to be repeated at intervals of ten days each. The first dose created a very severe reaction. The second dose caused none, but the third, fourth, fifth and sixth doses each caused a slight reaction. Since that time there has been no reaction and the patient has steadily improved. Since January, 1908, the tubercle bacilli have been absent from the sputum. Since March, 1908, there has been no sputum at all, and the patient has been practically a well man. At present patient is employed as a laborer at the Mare Island Navy Yard, and his work causes him no discomfort at all.

E. K.—Age, 43. Occupation, bookkeeper. Married, one child. Previous disease, enlarged prostate, very severe. History of a cough and loss of weight for a year previous to first visit. Temperature subnormal. Appetite very good. No night sweats. Cought persistent, worse in morning. Expectoration profuse. Has a chronic laryngitis with huskiness. Mental condition very poor. Physical signs: Both lungs. A diagnosis of pulmonary tuberculosis was made. Presented himself for treatment on 6th January, 1908. A dose of 1-1000 mg. of tuberculin T. R. was given, to be repeated every tenth day. A marked reaction followed the first injection, and a slight reaction followed the second dose. Since then there have been no reactions. Patient commenced to improve after the second injection, and the improvement has continued. After the fifth injection the patient felt well enough to resume his duties and returned to his desk. The improvement continued markedly but after the eighth injection the patient decided to go to Arizona, where he now is, and letters from him tell of continued improvement.

Dr. L. A. F.—Age, 43. Occupation, physician. Married, no children. Father died of hemorrhage from bowels. Brother and one sister both died of phthisis. Had pleurisy in 1896; typhoid in 1899. In 1904 had a severe orchitis with chest pains and has had "grippe" every year since. Had an attack of whooping cough in 1907, and has had sick headache ever since. Presented himself for examination 19th March, 1908. General health fair. Weight normal. Temperature subnormal. A week or so before, having smoked six cigars in one evening, he expectorated a mouthful of blood. The next morning he expectorated more, and a week later about a tablespoonful, and has expectorated a slight amount twice since. Tubercle bacilli are present in the sputum. Cough not troublesome. No night sweats. Appetite good and patient sleeps well. A diagnosis of pulmonary tuberculosis was made. On the 28th of March a dose of 1-1000 mg. of tuberculin T. R. was given, to be repeated at intervals of ten days each. A marked reaction followed the first dose and a mild reaction the second. Patient gave up his practice and decided to camp out at Mount Atlas, near Napa, a spot admirably adapted to the treatment of phthisis. Patient states that he felt well and noticed some improvement, but after the fifth injection resumed his practice.

Mrs. McG.—Age, 36. Occupation, housewife. Married, one child. For two years had been suffering from a general malaise, with a feeling of fullness and swelling of hands and feet. Consulted several physicians and by one was told that she had Bright's disease. Urine has always been very acid and at times rendered micturition painful. Urinalysis stained centrifugate, shows numerous staphylococci. On the 25th of aJnuary a catherterized specimen of urine was procured in a sterile bottle, and several tubes of bouillon inoculated from it. Upon incubation it was found that a culture of staphylococci had been grown. Upon plating out the bouillon cultures it was found that there were numerous colonies of staphylococcus albus and a few of staphylococcus aureus. The colonies of albus were selected, and agar slants inoculated from them. From these slants a vaccine was made, and on the 13th of January the first dose, equal to 300 million cocci, was given. The reaction was very severe. At intervals of ten days each the dose of 300 million has been administered. There were no reactions following that of the initial dose. The improvement, although very slow, has been steady. The urine has gradually cleared up, the cocci gradually lessening in numbers, and the transparency of the urine steadily improving. The patient is still under treatment and we heartily believe that a few more injections will suffice for a complete cure.

Mrs. McC.—Age, 68. Occupation, housewife. Married, six children. Had doctored for twenty years for a so-called "kidney trouble," and by one physician was told that she had Bright's disease. In August, 1907, was prostrated by an acute attack. There was an acute diarrhea, fever reaching 104° F., and great suppression of urine.

This attack simulated one of a year previous, and during which I attended her. There was no response to the usual medication of intestinal and urinary antiseptics and the patient's condition was most serious. Each urinalysis made showed a rod of colon character in the stained centrifugate. A catheterized specimen of urine, obtained under strict aseptic precautions and a bouillon culture made from it, showed a pure culture of the bacillus coli communis. From this culture a vaccine was prepared.

On the 29th of September an injection of a dose of the vaccine, equal to 50 million coli, was administered. The reaction was very severe, but the temperature dropped from 103.8° F. to the normal in three days.

The temperature was subnormal for ten days after this, when it rose to 103° F. A dose of the vaccine, equal to 100 million coli, was administered. There was a most alarming reaction after this injection, but the temperature was again reduced on the third day. After another subnormal period for seven days the temperaure rose to 102°. The last reaction having been so severe, it was decided to administer but 50 million. This was done and after the second day the temperature had reached normal, and up to the present writing is still so. Two subsequent injections of 50 million each were given, each without a reaction. Seven months have elapsed since the last dose of the vaccine, and the patient has enjoyed uniformly good health ever since that time, attending to her household duties daily.

SAN FRANCISCO COUNTY.

Opening address by Dr. Levison.

Fellow members of the Society: On the 17th of April, 1906, I had the honor to present a paper before the State Medical Society and the following morning on the steps of the Y. M. C. A. building, the Society adopurned sine die. It was a veritable sine die adjournment and with the developments which so rapidly followed, it became a grave question in my mind as to whether another meeting of the Society would ever take place in our city. I might recall, if only for comparison, the first session of the physicians of San Francisco, many of whom were in dire distress, and then glance over the assembly room thus to realize how much has been accomplished and how little need we fear for the future of the Society. I refer to these events because they emphasize the satisfactory state in which the Society finds itself to-night, a state which the most imaginative of us could not have conjured up two years ago. We are to enjoy the reestablishment of our own library and meeting place and I think we may congratulate ourselves that within the short space of two years we find ourselves

housed in so excellent a library and assembly hall. The idea of combining an assembly room and library was first suggested to the Board of Directors by Dr. Philip Mills Jones and his plan was only approved of after the subject had been most thoroughly discussed by the directorate and it was finally accepted as being the most advantageous proposition which had been presented. Money was appropriated for the purchase of books, for binding the Journals, and also for the purpose of furnishing the rooms. This has nearly exhausted the funds of the Society but it was felt that the limited funds at its disposal could not have been expended more profitably. With a reference library supplied with the best journals published, in the center of a district which will be populated by physicians, this library is destined to occupy a foremost position with us. We are to have a graduated librarian, and a stenographer will have desk room so that it will be possible to employ her services whenever necessary. It will be the aim of the directors to make the library of the highest standard possible commensurate with our income. For that reason I would beg of you to do all in your power towards increasing the membership of the Society, for our income naturally depends upon the extent of its membership. Before closing I desire to take the opportunity to urge each of you to do what you can towards making this Society what it should be—the representative organization of the medical profession of the Pacific Coast. This can only be accomplished by the exhibition of active interest shown by a regular attendance at the meetings, by the presentation of papers which should be presented voluntarily and relieving the executive committee of unnecessary labor. There is surely ample material in San Francisco to make it easy to present a good program once a month and with the members sufficiently interested this will be possible. Furthermore you are urged to make frequent demonstrations of cases and these will be given precedence over papers. It is to be hoped that the members will participate more earnestly in the discussions and that they will prepare themselves for the same. To this end it has been arranged that a program committee shall publish a synopsis of each paper read, at least a week before the meeting. Fellow members, I bid you a hearty welcome.

SANTA CLARA COUNTY.

The regular society meeting was held Wednesday evening, June 17, at the St. James Hotel, with fifteen members present. Hon. J. E. Richards, judge of the Superior Court, was the guest of the society, and gave to our members a most interesting and instructive talk on "Expert Evidence." Judge Richards has promised a resume on the subject, which will be forwarded to the Journal. Dr. Osborne told our members of the work accomplished at the recent state meeting. The committee on prosecution of illegal practitioners made a report of its work as well as a financial statement. The society extended the committee a vote of thanks for the excellent work they have accomplished in this community. The next regular meeting will be held at the San Jose Carnegie Library and if the members so decide, that building will be our permanent meeting place. The manager of the Hotel Vendome has extended our society the invitation to hold one of our meetings at that hotel, and to be his guests for the evening. The invitation was accepted with thanks, and the date of meeting left to the executive committee. After adjournment, thirteen of those present sat down to the banquet table, and by the way the good things disappeared, apparently no one had any qualms about that supposedly unlucky number.

K. C. PARK, Secretary.

SAN DIEGO COUNTY.

Amendment to the by-laws, adopted June 5, 1908:

No member of this Society shall act as physician or surgeon of any hospital association or similar organization, and the name of any member so acting shall be immediately dropped from the rolls and notice of such action at once sent to the Medical Society of the State of California and the American Medical Association. No member of this Society shall consult with a physician or surgeon holding a connection with a hospital association in his hospital association work.

R. E. AUSTIN, Secretary.

PUBLICATIONS

Glimpses of Medical Europe. By R. L. Thompson, M. D., Professor of Pathology, St. Louis University School of Medicine. J. B. Lippincott Company. 1908.

This is the title of a little book, destined to make many friends in the medical profession. Its author has traveled wisely and well, and gives us his point of view on things medical as he found them on a recent visit to Europe. Besides visiting Norway, Sweden, Denmark and Russia—countries the average American medical man leaves out of his itinerary—the author has visited the usual places in France and Germany, and it is rare that one hears so much about them in so few lines. While no pretense is made of issuing a medical Baedeker, the detailed information which one finds in his book will be of very great value to any man who is going abroad to study. But this is not all. It is sure to awaken an irresistible longing for a glimpse at foreign clinics, for an apprenticeship with foreign masters, in the man who heretofore ignored European medicine, as well as in the man who, easily satisfied, thinks that his is the only country which offers unsurpassed opportunities for study. And lastly, the book will find favor at the hands of physicians who have been abroad, recalling their days in Europe and stirring many pleasant memories. The book is practical, it is entertaining—read it. R. B.

A Text-Book of Minor Surgery. By Edward Milton Foote, A. M., M. D., Instructor in Surgery, College of Physicians and Surgeons (Columbia University); lecturer on Surgery, New York Polyclinic Medical School, etc. D. Appleton & Company, 1908.

Of the books devoted to minor surgery, this one, in our estimation, if by far the best. Probably the most striking feature of the book is its excellent series of photographic illustrations. In these days the abundance of magazine medical literature is shortening the lines of text books, so that the dust of months accumulates on our ordinary surgical volumes. We are convinced, however, that this book under consideration will gather little mould of disuse. The subjects with which it deals are those encountered most often, and frequently dealt with in the poorest manner by the surgeon, just as the pictures are characterized by clearness, so the text is concise, sensible, scientific and right to the point. The blending of pathology and surgery, and the rational dependence of the operation suggested on the morbid condition and development, denote the trained, clear mind of the author. It is hard to overestimate the excellence and fitting character of any of the sections. The chapters on the surgery of the hand and on infections and inflammations are specially valuable. Almost equally good is the consideration of the various common tumors of the body, dealt with in minor surgery. In fact, after looking over the book with some attention the prac-

titioner and surgeon will be convinced of its practical working value. It is a real hand-book of surgery and as such deserves only hearty commendation. C. B.

Maternity. By Henry D. Fry, M. D., Sc. D., Professor of Obstetrics, Medical Department of the Georgetown University. The Neale Publishing Co., New York and Washington. 1907.

A small work "intended for a guide to woman in fulfilling the most sacred duty of her life—maternity." The simple manner in which Dr. Fry has explained the normal development of woman, the physiological functions of her pelvic organs, and the hygiene necessary to avoid pathology will appeal strongly to the medical profession as a safe guide to place in the hands of patients. Reference to the literature, including the Bible and the latest articles on certified milk are well chosen and aptly illustrate points under discussion. The many popular superstitions of the laity in regard to pregnancy and childbirth receive hard knocks, while enough of the pathology of pregnancy is given to cause the sensible woman to place herself in competent hands early and not to trust too much to the well-meaning, but often silly and erroneous advice of near-friends.

The chapter on infant feeding is rather brief and incompetent, but even as it is it will do much to counteract the wildly extravagant commercial claims made for the patent baby foods. In a book which will surely be read by many women of the childbearing age, more could be said with propriety in condemnation of the all-too-prevalent criminal abortionist. Again, while dwelling strongly on the conspicious failure of modern woman to do her whole duty in regard to maternity, too much blame perhaps has been placed on the poor hygiene of modern woman's life and too little blame perhaps on the youthful indiscretions of modern man's life. A commendable feature of the book is the intentional avoidance of all discussions on treatment bearing on the subjects considered. A. B. S.

A Manual of Normal Histology and Organography. By Charles Hill, Ph. D., M. D., Assistant Professor of Histology and Embryology at the Northwestern University Medical School, Chicago; formerly Professor of Zoology, University of Washington. W. B. Saunders Company. 1907.

This manual is written in the interest of elementary students; therefore the fundamental facts in histology are presented in as clear and concise a manner as possible. The introduction of carefully selected illustrations is a marked feature of the book. While the general arrangement of the text is that ordinarily seen in works of this kind the discussion of the embryological basis of the subject is a pleasant departure from the inadequate traditional treatment usual in most of the text-books. Incidentally the author has touched upon the fundamental principles of laboratory technique. Probably the most noteworthy chapter which calls for special comment is that relating to the oral cavity. We know of no similar work which considers the subject so fully from both the embryological and histological viewpoints. The lucid description of the development, and morphology of the urinary and generative organs is in keeping with the general excellence of the other chapters. In conclusion we highly recommend this little volume to the class of readers for whom it is intended. A. J. L.

The Treatment of Disease: A Manual of Practical Medicine. By Reynold Webb Wilcox, M. A., M. D. LL. D., Professor of Medicine at the New York Post Graduate School, Consulting Physician to the Nassau Hospital; visiting physician to St. Mark's Hospital; fellow of the American Academy of Medicine; vice-chairman of the Revision Committee of the United States Pharmacopeia, etc., Philadelphia, P. Blakeston & Co. 1907. Price, $6.00 net.

We must quarrel with the author for giving his book the title "The Treatment of Disease," reserving as a sub-title the designation which conveys an idea of the real character of the book. It is essentially a Manual of Practical Medicine, and has no more right to be named The Treatment of Disease than have any of our older works on "Practice." We must insist upon this point for it enables us to properly classify Dr. Wilcox's contribution.

There are a number of excellent books in English devoted to the same subject. One at least is a classic, a second derives its merit from the attention its author gives to treatment, and a third is commendable. The Treatment of Disease, therefore, does not come to fill a long-felt want. It is not nearly so strong on Etiology, Pathology, Symptomatology and Diagnosis—those very foundation stones upon which treatment is built—as at least one of the older books. The section on the nervous system is particularly weak and inefficient. The paragraphs on treatment are full and valuable, though little is presented which is essentially new.

In conclusion, we must protest against the use of arsenic, in chorea, "until the full physiological effect is manifest, as evidenced by disturbance of the alimentary canal and edema under the eyes." Why use arsenic in this disease, when better results can be gotten, with less general disturbance? M. L.

The Practice of Gynecology in Original Contributions by American Authors. Edited by J. Wesley Bovee, M. D., Professor of Gynecology, George Washington University, D. C. Lea Brothers & Co.

This book, a companion volume to two others on Obstetrics and Pediatrics, deals with the diseases of the generative organs of women, and those of neighboring organs, the urinary system and rectum. It is written by seven American gynecologists under the editorship of one of them, Dr. Bovee. Dr. X. O. Werder, of Pittsburg, contributes the articles on the Examination of the Pelvic Contents, the Technique of Abdominal Operations, and Extrauterine Pregnancy; Dr. Wesley Bovee, of Washington, D. C., those on the Developmental Anomalies of the Female Generative Organs, Sterility, Diseases of the Rectum and Anus, Abnormal Conditions of the Urinary Tract in Women; Dr. Riddle Goffe, of New York, those on Menstruation, Displacements of the Uterus, The Vaginal Méthod of Operating, The After-Treatment of Abdominal Operations and their Complications; Dr. George H. Noble, of Philadelphia, Fecal and Urinary Fistulae Connecting with the Female Generative Organs, Lacerataions of the Perineum, and Diseases of the Vulva and Vagina; Dr. G. Brown Miller, of Washington, D. C., Inflammations, Inversions and Subinvolution and Hyper-involution of the Uterus, and Fibromyomata and Malignant Tumors of the Uterus; Dr. B. R. Schenck, of Detroit, on Diseases (exclusive of infections) of the Ovaries and Fallopian Tubes; and Dr. T. J. Watkins, of Chicago, Infections of the Fallopian Tubes and Ovaries.

Each contributor has striven to reflect the results of scientific investigations in an impartial and interesting manner. Moreover, a departure from the usual classification of diseases of the female generative organs has been made in this work, pathology and bacteriology being chosen as the chief guides, in view of the more rational and logical arrangement thereby attainable. This is particularly noted in the consideration of vaginitis, endometritis, salpingitis, ovaritis, and peritonitis. A. J. L.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI AUG., 1908. No. 8

EDITORIAL NOTES.

OUR VAST IGNORANCE.

Confronted with so simple a thing as a wart, for instance, the thinking man stands appalled at his own tremendous ignorance. What is it? A proliferation of tissue. True, perhaps, but why and how? The eternal question; why? Cancer, likewise, is merely constructive cellular activity gone wrong; but why? And in our puny ignorance, because of it and to conceal it, we have invented the application of many terms and names which, if interpreted, simply mean "I do not know." "Idiopathic" is a delightful word; almost as pleasant to the ear as "neurosis;" and quite as meaningless. One should, therefore, have infinite charity for research and a very broad faith tempered only with sufficient scepticism to keep him from falling into too hasty belief. When, for example, the door is opened upon such vistas of speculation as have been presented by the work which will all be called to the mind's eye by the new word "opsonin," the thoughtful man is given much food for reflection. On the one hand he is in danger of falling into the abyss of too sanguine and enthusiastic acceptance of wonders to be soon accomplished; on the other he is in equal danger of stepping into the morass of utter denial and foolish scepticism. What will be the eventual value of the work of Wright and others developed from their "opsonic index," etc., no man can say. At present, however, the working out of the "index" is too trammeled with possible error to be regarded as in the slightest degree a scientific proceeding. But certain basic facts of greatest value are involved and they at once arrest attention. The living unit is fed by his blood stream, and fed and nourished either well or ill. Here is the starting point of Wright's work, and also the very recent work of Crile upon the cancer problem. Every portion of the individual being fed by his blood stream, necessarily such bacteria as are making him their habitat must also be so fed; and proliferative processes like cancer formation are likewise so nourished. Can the content of the blood or some of its remote and not understood characteristics be so modified as to desirably modify abnormal processes in the individual? That, to a certain extent this can be done, is well known and accepted fact. The question presents itself persistently, however: To what extent is it possible to carry this principle into practical and useful application in the treatment of disease? There was a time when all diseases were "blood diseases;" when "humors of the blood" were the cause of everything from blasted love to broken necks. There was later a time when to intimate that any affection might have its origin in the blood was to excite ridicule. But again the pendulum has swung and the blood is once more receiving the rapt attention of investigators, though as yet we may truthfully say that, relatively, we know nothing about it.

WE WANT NEWSPAPERS.

A committee of the A. M. A. has been appointed to collect, compile and compare the advertisements of physicians. In this state we wish to co-operate in the work, and to that end it is necessary that we receive the various publications throughout the state in which such advertisements appear. Will you, who read this note, give us your help by sending us the local papers of your community, marking the advertisements of physicians in order to facilitate the work? It is not much trouble to you and it will be of the greatest assistance to those having the work in charge. Please help.

A GOOD EXAMPLE.

Elsewhere we print a circular letter which went to all the members of the South Carolina Association, in their journal, and it is well worth your careful consideration. Do not the same conditions apply to your own JOURNAL? There is no earthly reason why reputable manufacturers whose products we use should not support your own JOURNAL if they do any advertising at all. And most of these manufacturers do advertise in the privately-owned journals of the various states. Why do they advertise in these journals and not in the state journals? Every state association journal has a larger bonafide circulation within its state than has any privately-owned journal. It can not therefore be the lack of circulation which influences the advertiser. What is it? Can it be that the manufacturers do not care to aid in making permanent the state journals? Can it be that they would

rather support the journals whose reading pages, as well as whose advertising pages, they can buy? Can it be that they have some hope that through lack of support the state journals will not live and the present movement for reform will stop? Why not reciprocity? If we support a manufacturing house, why not insist that that house support your JOURNAL? It places its advertisement in journals which are *fighting against* our campaign for honesty in *materia medica;* why not place it in your own JOURNAL which is fighting for honesty? Every honest manufacturer who is really dealing in good faith with the medical profession, and who advertises at all, should support the journals representing the profession by advertising in them; if he does not, but rather chooses to advertise in the published-for-profit medical (?) journals, what is the reason? There is something very peculiar about this; should we not try to find out what it is?

PRIZE ESSAY.

The New York Academy of Medicine announces that the Edward N. Gibbs Memorial Prize, of $1,000 will be awarded on October 1st, 1909, to the author of the best essay on the subject of "The Etiology, Pathology and Treatment of the Diseases of the Kidney." All essays must be presented before the date given. New discovery or fruitful research will be considered the standard of merit, and each one of the three divisions of the subject may be treated at as much length as the author sees fit, but an essay, in order to obtain the prize, must show originality. If no essay of sufficient merit is received, the Academy reserves the right to make no award. Essays should be sent to the Committee of the New York Academy of Medicine on The Edward N. Gibbs Memorial Prize, from which committee full details may be had upon request.

OFFICIAL DRIVEL.

It is a great thing, from the business man's standpoint, to have conventions meet in his city; it is entirely immaterial what sort of folk convent so long as they *do* convent. The stranger within the gates must live and therefore he must spend money. *Q. E. D.* It is a matter of course that the commercial bodies and city officials of a convention city make every effort to secure all the conventions they possibly can and to issue invitations galore and write letters full of guff and soft soap. But that is no reason why the mayor of such a city should at one and the same time write himself an ass and extend a gratuitous insult to the educated and thinking people of his community. Los Angeles is trying to get the National osteopathic organization to meet there in 1909, and of course the usual number of invitations have been issued. One of these comes from Mr. A. C. Harper, mayor, and an extract from it, as it appears in the *Cosmopolitan Osteopath* for May-June, is as follows:

> "We offer you the friendly environment, not only of the state having the largest number of osteopathic physicians in the world, but we offer you the city having the largest number of osteopathic physicians of any city in the world; which means that population which gives the largest recognition to and patronage of osteopathy.
>
> "To carry the thought further, it means a city of 300,000 population, all of whose eight daily newspapers give friendly and sympathetic news service of osteopathic procedure. Indeed, no newspaper in America has made that systematic and long continued and exhaustive campaign for the advancement of rational therapeutics that has been made by Dr. Harry Brooke, editor of the 'Care of the Body Department' of the *Sunday Times Magazine.*"

The Los Angeles *Times* stands now, and has stood for many years, opposed to everything scientific, everything pertaining to rational medicine and medical science. Harry Brooke is not a "Dr." and never was. He is of the long-haired "Otis, Mex." variety of freak and weekly fills sundry columns of the *Times* with the most awful slush and drivel, relic of the superstition and the ignorance of the middle ages, samples of a cerebration which any alienist would find little difficulty in classifying. And of this sort of thing is the mayor of Los Angeles proud! Truly, it was not without reason that Los Angeles became known, some years ago, as the "Mecca of the quack."

OLD SAWS.

Many and various, and coming down from the ages are the maxims, proverbs, sayings, what you will, that attempt to put into a few words what is an inexorable law of nature in the sifting process of retributive justice. "The mills of the Gods grind slowly but they grind exceeding fine;" "honesty is the best policy;" "truth, crushed to earth, will rise again," etc., etc., *ad nauseam.* Yet the fact is so seldom appreciated. Whatsoever a man may do, if he is honest with himself first, last and all the time, and if he goes through the world doing that thing which he knows is the right thing for him to do; playing the game honestly according to the rules; giving every man a square deal and not lifting his hand to injure another, just so surely, and no matter what others may say or do nor how much criticism or calumny may be his portion, just so surely will he eventually come into his own and receive that reward which no money can buy. It may not come to him in the shape of riches or place or fame; when the last word is said and forgotten, these are but trifling piffle. It may not even be recognition during his lifetime; but it will surely be that inward satisfaction of having done the right thing, of having fought the good fight, of having played the square, clean game, of having lived to some purpose, which brings lasting contentment and "the peace of God which passeth all understanding." The other fellow may cheat, or be crooked or do those things "which no gentleman will do" and gain riches or temporary place. It

may even seem that no man has found him out or that he has lost nothing of the respect of his fellows; yet he hates and despises himself and, soon or late, he or his name sinks to the level which belongs to his type. Retributive justice sometimes seems to halt, to limp, to crawl, even to pause for long; but the certainty of it is fascinating. "Time is the essence of all things," and time is nature's tither; slow, sure, safe, inexorable. Live so that "you may look any man in the eye and tell him to go to hell," may sound a bit harsh in sensitive ears; but it is mighty true and mighty good philosophy, and if you do, you need not worry about the other fellow; nature and time will tend to his case.

VARICELLA OR VARIOLOID.

A number of instances of outbreaks of smallpox having their origin in some case of varioloid, mistakenly diagnosed as chickenpox, have come to our attention. Repeatedly has the JOURNAL urged the significant danger in the steady increase of smallpox in this State; again must the warning be uttered. Give the most minute attention to every case of apparent varicella and preferably notify the health authorities at once, so that the most careful examination may be made and the possibility of establishing a focus of variola infection eliminated. To ignore the slightest precaution in these cases is to play dangerously with fire; and to light up an epidemic of smallpox in this twentieth century, would be a lasting disgrace to our profession. There is a great deal of varioloid or mild smallpox in the state and it is very easily, and not infrequently, mistaken for varicella; occasionally with disastrous results to many people. Let us err rather on the side of too much caution than too little.

THE HARM WE WORK.

A pharmacist in Los Angeles recently wrote a letter to a physician in that community commenting wisely upon a prescription written by the said physician which had come to his drug store to be filled. Why do not more pharmacists write to the physicians whose prescriptions they fill, calling attention to the injury done the pharmacist by the careless use of proprietary preparations? It is only through enlightenment that physicians can learn the harm they are working through their ignorance of actual facts and existing conditions, and the pharmacist can give this information more easily, more surely and more frequently than can any other. We very gladly print Mr. Fulton's letter and we trust that he and other pharmacists will continue this good work. It is a shame that members of our profession have been so hoodwinked by the skillful lies of the manufacturers of proprietary mixtures that they have been led into doing so great harm to the profession of pharmacy. It is not merely the monetary hardship which we work upon the pharmacist—though that is bad enough—but we sink him to the level of the merely mechanical paster of labels or wrapper of packages of "ready-to- wear" medicines. We have a board of pharmacy working to raise the standard of pharmacists; we have a medical profession working to sink the pharmacist to the level of the mechanical shop clerk who but hands out ready-made packages. Letters of just this sort will be of the greatest value, for they call the attention of the individual physician to some one specific case, and in time they will have their effect.

FAMILY ADDITION.

And now comes the newest of our states—Oklahoma—bearing gifts and olive branches in its hands and presents to the family of state medical organization journals our youngest born. With June is issued Volume 1 Number 1 of the *Journal of the Oklahoma State Medical Association*. We regret to note that it contains the advertisement of glycothymoline, a preparation which was given two years to set itself right before the Council on Pharmacy and Chemistry—and did not attempt to do so. Such preparations are intended for general public consumption and self-doping, and the medical profession is merely used in the first instance to introduce the stuff and exploit it at the cost of the lay public. If you doubt the truth of this, just go to the nearest drug store and ask to see an *original package* of the preparation in question. Do not content yourself with merely looking at the label on the sample package which the manufacturer will gladly send you, but consult the label on the original trade package. You will there learn things that will doubtless surprise you; a most extensive list of diseases will there be found, and of course glycothymoline will cure them all. Oklahoma, go back and begin right. Cut out the unholy alliance between our profession and the lies and frauds of the nostrum man. Depend upon the Council on Pharmacy and Chemistry which, please remember, is the only institution in the world to which the medical man can go asking for the truth about materia medica preparations, and be sure of getting it. Don't believe anything that any manufacturer tells you, unless the Council says that the manufacturer is telling the truth. There is not one of them that has not, deliberately or inadvertently (and that is giving them the benefit of the doubt) lied to our profession and misstated either the composition of some of its wares or their active value. You cannot depend upon your own judgment, for you do not know enough to judge; you cannot depend upon the statements of the manufacturers, for they are all interested in but one thing—selling goods; and they have all told us—what was not the truth. The transmutation of metals is child's play in comparison with the wonderful changes which the manufacturer can produce in the action of well known drugs and chemicals, merely by means of a lie on the label. Do not let the published-for-profit medical (?) journals fool you into thinking that there is anything back of this movement except a desire to get the truth—the real, plain, ordinary, simple garden truth.

ON THE RELATION OF ANTICYCLONIC WEATHER TO THE PREVALENCE OF LA GRIPPE AND PNEUMONIA ON THE NORTHERN HEMISPHERE WITH SPECIAL REFERENCE TO RECENT EPIDEMICS OF PNEUMONIA IN CHICAGO AND SAN FRANCISCO. *

By C. M. RICHTER, M. D., San Francisco.

The report of the pneumonia commission of New York,[1] issued end of 1905, contains the words: "Our studies have thrown no light whatever upon the conditions, which determine the onset of lobar pneumonia in apparently healthy persons. Moreover, we have been unable to draw conclusions as to the presence of pneumococci in the lungs during life, or as to the channels by which they gain access thereto." The United States Census report of 1900 says: "The very fact of an increasing mortality from pneumonia in late years, when general hygienic conditions have steadily improved, would disprove the efficiency of such a course of prophylaxis."

Juergens[2] in a résumé of the latest research work on pneumonia refers to the attempts made most recently to discover a positive difference between the pneumococcus of a healthy mouth and that of the pneumonia mouth and asserts the absolute failure to establish a specific character for the pneumococcus of pneumonia.

Where there is still so much darkness I hope you may pardon me for drawing your attention to certain conditions of the atmosphere, which accompany pneumonia epidemics over the entire northern hemisphere, and where San Francisco seems to give the key to knowledge.

Osler[3] says that "cold" has been for years regarded as an important etiological factor, but that in fact there is very little difference in various state groups of the United States.

Musser and Norris[4] referring to meteorological influences, say that "owing to the complexity of the problem, an exact scientific solution of it is still unattained." They add: "Most writers have attributed a predisposing potency to change of temperature."

During the last meeting of the American Medical Association at San Francisco, June 5-8, 1894, I read a paper[5] on the influence of atmospheric pressure on the prevalence of pneumonia. I maintained then, that excessively high air pressure appears coincident with epidemics of pneumonia in the northern hemisphere and exhibited charts demonstrating this fact for a number of cities. That paper had been made possible by a study of the different climatic regions of California in their relation to morbidity and mortality from pneumonia.

As so-called "cold weather diseases" were prevalent in California, but the cold weather missing, I charted all the different meteorological factors and the pneumonia mortality figures together for a number of years for the different climatic regions of California, and could thereby establish the fact, that, at least everywhere in California, in the Sierra as well as near the sea coast, there was absolutely no relation between temperature and humidity and such mortality, but clearly so between periods of high air pressure and such mortality.

One may consider San Francisco as the city par excellence to make a research in regard to the influence of weather on disease.

There is hardly any other large city to be found on the northern hemisphere with as little difference between the mean temperature and mean relative humidity of January and July.

NORMAL AIR PRESSURE.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	30.09	30.07	30.02	29.99	29.96	29.95
S. F.	30.11	30.10	30.06	30.05	29.99	29.95
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic.	29.98	29.99	30.04	30.04	30.06	30.08
S. F.	29.95	29.93	29.94	30.01	30.08	30.12

NORMAL TEMPERATURE.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	23.4	26.8	34.1	45.6	56.1	66.7
S. F.	50.1	51.7	53.6	54.6	56.6	58.4
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic.	72.0	70.9	69.2	52.0	38.4	29.3
S. F.	58.3	58.7	60.4	59.3	56.3	51.4

NORMAL RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	81	81	75	71	70	72
S. F.	79	77	78	78	78	79
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic.	67	68	69	69	77	79
S. F.	83	85	80	79	75	81

Extreme winter and summer temperatures and extreme cloudiness may justly be eliminated in San Francisco. The lowest temperature in Chicago is—23, in San Francisco 29, a difference of 52 degrees. On the other hand, San Francisco could easily take the laurels from Chicago as "the windy city, in summer time. In San Francisco ocean winds are prevailing during 9 months of the year. Of course it gets ocean sand with them, which we call sometimes an abominable dust. The prevailing wind of Chicago is S. W. but during five months it is N. E., coming from the lakes. San Francisco has not been a densely populated city, like Chicago, and enjoys a rather pure ocean atmosphere, very different from the air inhaled in Chicago, New York, London, Paris or Berlin.

It is the presence of the Pacific Ocean and the westerly direction of the winds that insures high winter and cooler summer temperatures for San Francisco. Even Chicago's winter temperatures are somewhat ameliorated by the large area of fresh water near it.

San Francisco has an average of 69 rainy days in the year and Chicago has 126. The percentage of possible sunshine is 57% for Chicago and 63% for San Francisco.

It will impress you deeply, when you study this second chart before you, giving the even temperature and humidity line for San Francisco for every day of the 11 years 1888 to 1899, in contrast to the lines of pneumonia mortality and air pressure.

These facts prompted me to make and to put before you a study of the pneumonia epidemics of Chicago and San Francisco for the 5 years 1899 to 1904, in their relation principally to air pressure.

* Read before the San Francisco County Medical Society, March, 1908.

Meteorological observations and figures take the place of experiments, where periodical changes in the atmosphere and their effect on climate are to be investigated. Such research work should be more encouraged.

A fundamental difference between low and high air pressure, that is between cyclones and anti-cyclones, lies in the fact that during the cyclone the lower air, the ground air, the air that had been with us since the last anticyclone, is ascending into the upper atmosphere, whilst during an anticyclone the reverse takes place; the air is coming down from the higher levels of the atmosphere.

The anticyclone is represented by a gyration of air that enters at the top and flows out at the bottom. The air is descending almost vertically in the center and shows an outward flow everywhere in the circumference of the anticyclone. The distance of the center of an anticyclone from that of a cyclone is generally about 2000 miles in the United States and often more than that in Europe. It is not so very seldom that the entire area of the United States is covered by an anticyclone.

The cyclones travel at the rate of 20 to 60 miles an hour, the anticyclones show a similar speed, which is, in fact, the speed of our railroad trains and which is the speed with which la grippe epidemics are said to travel.

Suppose that an anticyclone has its center at half distance between Chicago and San Francisco, then it is clear that some of its center air may travel at this rate 1000 miles towards San Francisco and some of it 1000 miles towards Chicago. It is at present assumed that the so-called "wandering" cyclones are rather shallow, extending only about 2-3 miles upward. They are not supposed to feed the anticyclones with their air, as the anticyclones extend higher up.

The continuous procession of such areas of low and high air pressure from a westerly to an easterly direction in our latitudes furnish the rainstorms and the fine weather periods during the so-called cold season.

The anticyclones sometimes stop their wandering tendency. Such anticyclones seem to have a dynamic, not a thermic origin, like the rest of them. They represent a blocking of the higher and lower atmosphere and it seems that cyclones in their neighborhood have no effect whatever on their gigantic mass of air, that may cover the area of the United States, or of Europe and Asia together. Such anomalous anticyclones bring generally much higher pressure than their wandering cousins and they last longer.

Without doubt they bring an atmosphere to our lungs quite different in quality from the one coming out of a shallow high. I may say right here that periods of increased activity in the sun bear a certain relation to the appearance of such increase of air pressure on our globe. The sun is practically the sole source of the energy which maintains the movements of the Earth's atmosphere. It is the center of a continuous outflow of radiant energy, some of which is appropriated by the earth. This outflow is more or less modified by certain periods of the sun's activity.

One of our greatest living meteorologists * has said only recently that "the problem of weather periods and their connection and dependence on the activity of the sun is one of the grandest and most beautiful problems of modern meteorology."

The highest levels of our atmosphere are more directly affected by this energy than the lower levels, and thus we have to qualify the air that flows down to us during a period of a stationary anticyclone, according to the special conditions of the sun that may have affected it. For instance, ozone is formed in the highest atmosphere consequent to the absorption of ultraviolet rays and you all know the irritating effect it may have on mucous membranes.

Then again, since radium became known to us, we became acquainted with radioactivity which is considered now a universal property of our atmosphere. A constant ionization is going on in our atmosphere, due to the radioactivity of our earth and to the work of sunrays. Radioactive influences seem to be derived principally from the pores of the earth.

Physicists, in following up this matter, found that during cyclones this radioactive influence becomes exceedingly marked in our atmosphere. The ascending air sucks the emanation out of the soil. In consequence negative electricity predominates in our atmosphere.

During an anticyclone the rising of such radioactive emanation seems more or less prevented by the increase of air pressure over the capillaries of the earth. In consequence positive electricity prevails. As we have no special sense for electricity, nor for air pressure and its variations, we do not become aware of the tremendous differences that exist in the air we breathe during different weather conditions. In general, it may be said that during a cyclone, at least during the beginning of one, the air is filled with all the impurities that possibly can be lifted and carried upward from the ground. During an anticyclone the atmosphere coming to us should represent the purest air possible, an air possessing all qualification that the sun's energy may impart. The higher the air pressure, the higher probably is the origin of such air and the more specific is such quality.

How can such relatively pure air be of detriment to our lungs? Has change of air pressure in itself any possible effect on our system? A London physician, Dr. R. Mead, wrote in 1746:[6] "The whole body, in the heaviest air (30.8 inches) sustains a weight of about 33.684 pounds; in the lightest (28 inches) of 30.622 pounds, 5 ounces. Whence the difference of pressure at different times is 3.062 pounds. True it is that the internal air of the human body makes a resistance to that weight, but yet such change of pressure must necessarily have considerable effects. Such effects must of necessity be most visible in weak bodies and morbid consti-

* I. Hann.

tutions, when other circumstances concur to their taking place, while strong bodies and sound constitutions are little affected by them."

In regard to the effect of electricty on our body, Prof. J. Loeb[7] says, that "nature had so safeguarded the electric conditions, and especially the equilibrium of electric forces within the body, that any disturbance of this by external electric force is utterly impossible. We are so constantly placed on varying electric conditions because of alterations in the electricity in the earth and the air, that if this were not the case animal life would be in almost constant danger from the magnetic storms that are so frequent."

But is it true that we are so safeguarded? Was the London physician nearer the truth in 1746, when he had his doubt about weak bodies? Is the terrific morbidity and mortality from pneumonia not perhaps a proof of an insufficient safeguarding?

Dr. W. T. Howard of Cleveland[8] had 35% pneumonia in 550 autopsies. 6% were due to primary and 29% to secondary pneumonia. He says that 50% of his autopsies on typhoid fever subjects showed pneumonia.

Any reflex action on the mucosa of the air passages may cause a hyperæmia, or such molecular changes in it, that a secondary infection may become established.[9] Whether air pressure or ozonization, or a specific ionization may cause such reflex actions, we do not know. Whether other potencies of the higher atmosphere may influence our health, we do not know.

However, these charts may demonstrate to you that during a prevalence of anticyclonic weather and especially inside the area of a stationary anticyclone pneumonia and probably la grippe are generally prevailing and sometimes become epidemic.

That temperature, sunshine and humidity are in no relation to the prevalence of pneumonia I tried to prove to you by the San Francisco chart. During the entire period of 11 years from Aug. 1, 1888 to May 2, 1899 there are only 2 great epidemics of pneumonia in San Francisco and they are representing at the same time the only two periods of excessively high air pressure that have been registered during those years.

About 340 deaths from pneumonia occurred during the continuous 9 weeks ending March 11, 1890, and about 380 deaths during the continuous 9 weeks ending Jan. 26, 1892. Not before 1890, nor after that year until summer 1904—my records go to 1904—has the mortality from pneumonia again reached such figures for any continuous 9 weeks in San Francisco.

Of course we may call la grippe responsible, but then we have to blame excessive air pressure periods for the prevalence of both diseases.

The increasing population of San Francisco, therefore, can not be blamed for an increase of the mortality from pneumonia. It seemed wise just for this reason, to compare two cities like Chicago and San Francisco in regard to their pneumonia mortality and their air pressure conditions. You are confronted on this chart with a highly interesting problem of pneumonia epidemics.

To make the comparison as direct as possible I gave on this chart the mortality figure of San Francisco five times higher than the actual one, as Chicago's population was just about five times higher than San Francisco's during that period. You see without difficulty that there are real epidemics of pneumonia in almost every year in either city, that they are not synchronous, that they are quite different in the figure of mortality in the different years and that these figures are not increasing from year to year, that Chicago's mortality comes to a very low ebb every summer, except 1903, that San Francisco has a reduced but still considerable mortality from pneumonia every summer, especially 1903, and that all these epidemics of Chicago and San Francisco are keeping most accurate pace with the increase and decrease of air pressure, as registered in these cities. If we select nine continuous weeks as a time unit of the lowest and highest mortality in either city for the five years, we find the following figures to represent mortality and air pressure:

	30.2 and above.	29.9 and below.	29.9-30.2
1. Lowest mortality from pneumonia. Days with air pressure of:			
Chicago, 9 continuous weeks... Summer, 1900. Mortality, 18.3 per week.	2 days	11 days	64 days
San Francisco, 9 continuous weeks ..... Summer, 1901. Mortality, 38.2 per week.	none	18 days	59 days
2. Highest mortality from pneumonia.			
Chicago, 9 continuous weeks... Spring, 1904. Mortality, 148.8 per week.	31 days	16 days	30 days
San Francisco, 9 continuous weeks ..... Winter, 1900-01. Mortality, 137.1 per week.	24 days	13 days	40 days

In this comparison I have included the air pressure figures for the 2 weeks preceding the continuous 9 weeks of lowest and highest mortality from pneumonia during the 5 years. We have, therefore, the air pressure figures for 77 days and the mortality figures for 63 days. It is obvious that this should be done and it is doubtful whether the air pressure figures should stop 2 weeks before the end of the continuous 9 weeks of mortality.

These examples make it quite clear that it is not the cyclonic, but the anticyclonic weather that is in correlation to these epidemics. Chicago had a mortality of over 19,000 during the 5 years (256 weeks) and San Francisco of over 20,000 (1328 cases more). Of course only 1-5 of this mortality gives the actual figure for San Francisco. During the cold period of the year Chicago had an average mortality of 104 per week and San Francisco 100 per week. During the warm period Chicago had 44 per week and San Francisco 58 per week.

Undoubtedly the effect of a high pressure area may become mitigated or entirely offset by an area of very low pressure following it closely and extending over a longer period. The cyclone would remove the air brought by the anticyclone.

Only the closest study of these charts will give an adequate idea of the difficulty, to prove a correlation numerically.

To the meteorologist it is clear that such air pressure figures are only makeshifts in trying to prove a period. It is impossible to prove by them just where the anticyclone gives way to the cyclone, or when the air in its quality is changing from that of the upper to that of the lower atmosphere. It is impossible to give the proper numerical expression to the value of an anticyclone in contrast to the one of a cyclone. Naturally the two areas merge imperceptibly into one another.[10] But the proposition before us is, in future to prove the character of an anticyclone by the character and the quality of its air and not only by figures of air pressure. And this is the point where research work of the medical physicist could set in.

My work necessarily has been on empirical lines, but it carries us logically to the assumption that there must be something noxious in the air that comes to us during high air pressure periods, a noxiousness that is in direct relation to pneumonia and la grippe.

The proposition before us demands, it seems, to search and to examine critically the air we breathe during different air pressure conditions, less with reference to its temperature, moisture, motion and more as to the quality that is imparted by the radiant energy of the sun, by radioactivity, ozonization or whatever physical quality there may be.

Any investigation of this nature should not be contented to prove a reciprocal relation of certain weather conditions and pneumonia and la grippe as existing in a city or on a small part of our globe, but should endeavor to prove such relation for at least one hemisphere. The southern hemisphere would necessarily show corresponding conditions.

This is exactly what I emphasized in my paper of 1894 when I pointed to the fact that the limits of high air pressure over the northern hemisphere are at the same time the limits of the prevalence of pneumonia. At that time I exhibited charts, demonstrating this fact, for Berlin, Munich, New York, Cincinnati and San Francisco, covering many years, for instance, 10 years for Berlin and 22 years for San Francisco. Likewise, I charted this correlation for St. Petersburg, London, Paris, Naples, New Orleans, Denver and Salt Lake City but, unfortunately, our great fire did away with all these charts.

Periods of excessively high air pressure appear during certain years and certain months on different parts of our hemisphere. In some years European cities will experience this condition as well as cities of the United States almost during the same month —sometimes only one continent will exhibit this feature.[11]

But epidemics of pneumonia or la grippe are always developing in consequence. The two greatest epidemics of la grippe that existed in Europe during the last century were the two of 1833-4 and 1889-90 and the entire 19th century had the highest air pressure recorded just during those two winters.[12]

I would like to close these remarks with the words of the great clinician Ziemssen who, alluding to epidemics of la grippe and pneumonia wrote many years ago: "After all we can not but assume that there must be general conditions, perhaps multiplied by local circumstances, which appear and disappear simultaneously in great expanse of space. Of what nature these influences may be, is perfectly dark. We would not be forced to think of miasm or contagion. We are more led to believe, that fluctuations of other conditions, extending over great areas of the surface of our globe at the same time, furnish an analogy."

Conclusions.

Pneumonia is not merely concomitant to the cold weather season.

Its prevalence depends on anticyclonic weather, summer and winter, on the northern hemisphere, and not on low temperature.

There is sufficient reason to assume that the quality of the air of an anticyclone changes in conformity with changes in the activity of the sun and that the prevalence of la grippe and pneumonia is subject to a specific quality of such air.

1. Pneumonia Commission American Medicine, Sept. 23, 1905.
2. Juergens, Medizienische Klinik No. 10, 1907.
3. The Principles and Practice of Medicine, by W. Osler, 1906.
4. Modern Medicine, by W. Osler, 1907, Vol. 3.
5. Influence of Atmospheric Pressure on the Prevalence of Pneumonia, by C. M. Richter, M. D. The Journal of the American Medical Association, Vol. XXIII, 1894.
6. A Treatise Concerning the Influence of the Sun and Moon Upon Human Bodies, and the Diseases Thereby Produced, by R. Mead, F. R. C. P., London, 1746.
7. Quotation.
8. The Frequency and Etiology of Acute, non-Tuberculous Pneumonia in a General Hospital, by W. T. Howard; American Medicine, Oct. 28, 1905.
9. Erkaltung und Abhartung. A. Strasser Die Deutsche Klinik. Band 1, 1903.
10. Climatology of the United States, by A. J. Henry, 1906.
11. Lehrbuch der Meteorologie von Dr. Julius Hann, 2 Aufl., 1906.
12. Sonnenflecken, Erdmagnetismus und Luftdruck von Dr. C. M. Richter Meteorologische Zeitschrift. Band 19, 1902.

Discussion.

Prof. McAdie: Dr. Richter has asked me to criticize his paper as severely as possible from the standpoint of the climatologist. Unfortunately I am not able to do that because I know that most of the data has been gathered with thorough painstaking accuracy, and that there has been no straining of the facts; and that in all of his statements concerning pressure, temperature, humidity and sunshine he has records to verify them. The weak point in the argument is that the curves are integrated curves, whereas we need the component curves of "susceptibility." If the character of the air is the predisposing factor we ought to have in our curves not the total death rate but should know more of the number of cases contracted and the recoveries. So, with the pressure curve, it is almost impossible to determine from an integrated curve the individual component curves desired. As Dr. Richter says, in regard to the difficulties of his paper, it is almost beyond the power of a meteorologist to give a proper characteristic pressure con-

dition; for we have all kinds of pressure conditions. We may have a high pressure with everything favorable, upon this supposition, for the development of pneumonia and right in the middle of it the opposing condition will occur. How can you correlate such conditions? From the standpoint of the climatologist I think that too much importance may be given to climate. It is a double-barreled proposition. You have climate and you have man. You must remember that one man will get pneumonia because of imprudent exposure and the other man, properly housed and cared for, will not have pneumonia. There you have climate control. In Chicago you may have the same climate, the same pressure say, yet the houses may be warm, and a man stepping out of his house may walk in slushy streets, or get into an environment favorable for pneumonia. I wish to pay tribute to the work Dr. Richter has done. This is in many ways a memorable paper. It opens up a wide field of investigation. He traces a relationship between pneumonia mortality and high pressure conditions that seems to be more than an accidental relation. He has done the work with great detail and with great labor, trying to trace the relationship between the demonstrated high air pressure condition and the prevalence of pneumonia. Dr. Richter has done a great deal of thoughtful and honest work and has opened up an important line of investigation for the medico-climatologist.

Dr. Richter (closing): This chart, exhibiting epidemics in Chicago and San Francisco during 5 years, I thought would interest you, first, because we practitioners have been taught that pneumonia is a disease, more or less under the influence of low temperature, that it spreads itself generally over the cold season of the year and that it is an infectious disease, which calls for a certain prophylaxis in regard to sputum. On this chart you find that, although pneumonia is more prevalent during the cold season, it appears in the form of epidemics of different magnitude in the different years, seasons and cities, and is entirely independent of low temperature, as the conditions in San Francisco exemplify. Secondly, we learn from this chart that these epidemics are a function of the prevalence of anticyclonic weather and I tried to lay all possible stress on the proposition to look for an explanation not in the mechanical pressure of the atmosphere, but in possible qualities of the air, as carried to us during an anticyclone from the higher levels. Such air should be supposed to be qualified by the radiant energy of the sun and to a different degree during the different periods of the sun's activity.

REVIEW OF RECENT WORK ON TUBERCULOSIS.*

By LEWIS SAYRE MACE, M. D., San Francisco.

The purpose of this paper is briefly to report some of the most important articles, which have appeared during the past year upon the subject of tuberculosis. No attempt has been made to report them all for that would clearly be impossible, but a resume of the work which has been done along the lines of etiology and diagnosis should serve to show the trend of modern experimental research in the field and to point the way to a better understanding of modern treatment.

Under the heading of etiology the statement of Koch, made before the London International Congress of 1901, that the human species was not subject to infection by the bacillus causing bovine tuberculosis takes first place in importance and interest. To settle this question a royal commission was appointed consisting of Sir Michael Foster, Woodhead, Martin, McFadyn and Boyce, whose second interim report (1) published in February, 1907, gives the results of their labors to this time. While their work is not by any means completed, it is evident from this report that their experiments are being made in the most thorough and scientific manner, and it is already quite apparent at what conclusion they will eventually arrive.

Their experiments with bovine tubercle bacilli were performed upon guinea pigs, dogs, cats, rabbits, goats, apes, baboons and monkeys, and the organism was found to be fatal to all these animals as well as to the bovine species and to act upon them in the main with neither more nor less virulence.

The human bacilli worked with fall into three groups. Group I resembles the bovine type in cultural characteristics and virulence upon the animals mentioned. They grow with difficulty upon artificial media as the bacilli of the bovine group do. After an injection of equal doses the animals used develop rapidly fatal general tuberculosis equally with those infected with the bacilli of the bovine group. In other words, Group I is the bovine bacillus and nothing else.

Group II are far less virulent to animals in the doses used than those of Group I. They grow easily upon artificial media. In comparatively large doses a rapidly fatal general tuberculosis does not follow in dogs, cats, guinea pigs, etc., while, on the other hand, when monkeys, apes and baboons are used a comparatively small dose is followed by rapidly fatal effect. The important fact is thus shown that their virulence increases as the animals used approach the human type.

Group III is intermediate in virulence between Group I and Group II. It lies between the two in cultural characteristics, and it is generally unstable and variable in its virulence.

In conclusion, the committee say: "Of the sixty cases of the human tubercle bacilli studied by us fourteen belong to Group I, that is to say, contained the tubercle bacilli of the bovine type. Of these sixty cases twenty-eight possessed clinical histories indicating that in them the bacillus was introduced through the alimentary canal. Of these, thirteen belonged to Group I. Of the nine cases in which cervical glands were studied by us 3, and of the nineteen cases in which lesions of abdominal tuberculosis were studied by us, 10 belonged to Group I. These figures indicate that a large per cent of tuberculosis contracted by ingestion is due to the bovine

* Read before the Cooper College Science Club, March, 1908.

bacillus. A very considerable amount of disease and loss of life must be attributed to the use of cows' milk containing tubercle bacilli, and such milk ought never to be used as food. Our results clearly point to the necessity of measures more stringent than those at present enforced being taken to prevent the sale or consumption of such milk."

The question whether heredity or contact infection is the more important factor in human tuberculosis is well discussed by Hazen (2) of Johns Hopkins. At the Phipps Dispensary, he says, they believe heredity to play a minor role. For this paper eighty-three families were studied containing five hundred and thirty-four individuals, of whom two hundred and fifty-four were tuberculous, thirteen suspicious, and two hundred and sixty-seven well. These figures alone speak for contact infection. Sixty-two of the patients were free from hereditary taint, and his careful analysis of the statistics at hand certainly speak for the importance of contact infection. Of forty-eight individuals exposed by marriage, twenty-one have contracted the disease and two are suspicious. Where the husband or wife had tuberculosis the other developed it in 43% of the cases. In fifteen instances, one or both parents suffer from tuberculosis and the children are free. And the most striking fact of all is that out of two hundred and fifty-four patients, only three who were not in contact, developed the disease.

All of this would tend to show that more or less intimate contact with the tubercular is a prime factor in the dissemination of the disease and that any hereditary taint can be ignored. Nevertheless, the fact so long observed clinically that children of tuberculous ancestry in many cases show lack of resistance to the disease cannot be denied. Although some writers go so far as to refuse to acknowledge the possibility of any hereditary tendency to tuberculosis, the fact that it does exist cannot be seriously questioned. In this connection, the work of Vaughn and Wheeler (3) on the production of anaphylaxis or hypersusceptibility to albumen injections should be mentioned in that their experiments showed that this specific hypersusceptibility was transmitted through the mother to her offspring. And certainly if anaphylaxis, which is a condition in which the cell body has developed to a high degree the power of elaborating a proteid splitting enzyme like body, is transmissible to offspring, it should hardly be a cause for doubt that the susceptibility to tuberculosis should be transmissible also.

To make this point clearer I should speak further of this condition of anaphylaxis or hypersusceptibility. The authors quoted have been working upon the separation of a poison group in the proteid molecule of egg-white. Following the previous work of Rosenau and Andersen[6] they established a condition of anaphylaxis against this proteid to prove that their separation of poison group and nonpoison residue was an actual one. One injection of egg-white they found to be without effect, while a second likewise was ineffective if made within a few days after the first. If ten or twelve days, however, were allowed to elapse, the second injection caused poison symptoms consisting of: 1st. Evidences of peripheral irritation, violent scratching, etc.; 2d. Paralysis, especially of the hind legs; and, 3d, Violent clonic convulsions and death from respiratory failure. This corresponds to what has long been known to occur while using guinea pigs for standardizing diphtheria antitoxin. These animals would often die suddenly without known cause following subsequent injections of horse serum upon whom the first had had no effect. Vaughn and Wheeler explain this as due to a condition of hypersusceptibility developed in the following way: The first injection of proteid is slowly split up as the body cells are unprepared with the binding group or enzyme-like body in any large quantity. The toxiphore or poison group is therefore released but slowly, and is eliminated without doing harm. In the process, however, the cells have acquired the ability to elaborate the binding group or receptor group in large quantity, and a second dose of proteid is rapidly split up and the poison group is liberated, causing its symptoms depending upon the dose used. The fact that this condition of anaphylaxis is transmitted by the mother to offspring should be considered before denying the possibility of the inheritance of susceptibility or loss of resistance to tubercular infection.

Some very valuable work has been done along lines suggested by Von Behring's theory that practically all tuberculosis is intestinal in origin and transmitted in infancy by means of cows' milk or swallowed particles of dust and dirt. The fact that tubercle bacilli may gain admission to the lymph stream through the intestinal walls without infecting them in transit or loosing their virulence is well established. Schlossman and Engle[4] injected an emulsion of tubercle bacilli into the stomach of guinea pigs after laparectomy. The experiment was carried out with great care and attention to detail to prevent the accidental infection of the blood during the operation. A few hours after the operation the bacilli were constantly found in the lungs, having gained admission to the mesenteric lymph vessels, thence to the thoracic duct and from this to the right heart and lungs. In the same line with these researches is the experimental anthracosis after the theory of Calmette that this disease is always of intestinal origin. Van Steenburg and Somerville[5] adhere to their previous statement that it is possible for coal dust to traverse the wall of the intestine and reach the bronchial glands and even the lungs themselves. Corroborating these experiments is the work of Petit[7] and Vallee[8] and others, and while many workers do not agree and are unwilling to believe that the lungs can be infected by tubercle bacilli through the blood in the manner stated, still it must be confessed that the evidence at hand seems to show that it is possible and more than probable that in a vast majority of cases tuberculosis has its origin in ingested rather than inhaled infectious material. This should be taken as an added proof if any were needed that all tuber-

culous milk should be excluded from the infants' dietary.

The recent work on the early diagnosis of tuberculosis may well be introduced by consideration of the paper by Hamman and Wolman[9] of Johns Hopkins, since it deals principally with physical diagnosis and tends to show that entire attention of late has not been devoted to serum reactions. The question "How marked must the signs be in order to pronounce a suspect to be a tubercular" is answered by the consideration of one hundred and fifty early cases received at the Phipps Dispensary, all of which were proved subsequently to be tubercular by the finding of tubercle bacilli or a positive tuberculin reaction or the subsequent development of the case. All showed one or all of the three cardinal signs, alteration of the percussion note, modified breath sounds and rales. Where these three signs occur together, no matter how slightly marked one or another may be, the case is unhesitatingly pronounced tuberculosis. In sixty-one patients of this group the three signs did not occur together and hence the physical diagnosis alone was not sufficient for diagnosis.

In 29, or 47%, change in percussion note was present. Rales were present in 53% and modified breath sounds in 61%. Modified breath sounds is therefore the most frequent early sign. Where only one sign of the three was present rales was slightly in the lead. In 2-3 of the group two signs were present; they were, percussion note and rales 16%. Breath sounds and rales in 23% and percussion note and breath sounds in 25%. Alteration of breath sounds being decidedly in the lead.

In 60% of these cases the respiratory rate was above 20 per minute; and 42% of these complained of loss of weight, half of these knowing of no disturbance of digestion or appetite to account for this loss. On account of these being ambulatory patients no temperature record was obtainable, otherwise the number of positive diagnoses from signs and symptoms might have been much larger.

It is interesting to note that 60% of the early cases were diagnosticated from physical examination alone, leaving but 40% in which further evidence was necessary for positive diagnosis.

In considering the diagnostic and therapeutic uses of tuberculin as affected by recent researches it seems important to review some of the investigations into the cause of the tuberculin reaction and recent rpogress into the study of tuberculin immunity, especially so since these studies have already resulted in the better understanding of the use of tuberculin as a remedy and have led to a wide appreciation of its value.

On the injection into the circulation of a foreign proteid, such as horse serum, egg-white or bacterial bodies, certain profound changes occur in the body cells as a result of which they acquire the ability to split up rapidly a succeeding dose of the same proteid. This is the reaction of anaphylaxis, which plays a most important part in the production of active immunity. In the case of the subject infected with tuberculosis the cells have already been rendered hypersensitive by the action of the invading organism, and the injection of tuberculin is therefore followed by the rapid splitting of this substance into its poison and non-poison groups. Binding of the toxophore group by the sensitized cells occurs, followed by the typical reaction. In the nontuberculous, on the other hand, where this condition of anaphylaxis does not exist, the cells, lacking the necessary binding group, can produce it but slowly. Consequently, the poison is liberated slowly and eliminated rapidly without causing the poison symptoms, which constitute the tuberculin reaction. It is therefore necessary to bear these facts in mind and to give as small doses as possible, repeated no oftener than necessary to give the characteristic reaction. Roth-Schultz[11] prefers to begin with .5 mg. doses increasing slowly to 2.5 mg. Roepke[12] advocates rapidly advancing to 5 mg. doses, which is half the maximum dose of Koch. This rapid increase of dosage appears the more rational method since we should remember that anaphylaxis may be induced by small doses of tuberculin, provided sufficient time is allowed to elapse between injections.

Wasserman[13] and his pupils have carried the investigations still further, and have elaborated an interesting theory of the cause of the tuberculin reaction. According to Wasserman, the condition of hypersensitiveness is the first stage in the production of active immunity. That is to say, the cells in proximity to the tuberculous lesion are well supplied with amboceptor groups. These seize upon and bind the invading proteid by means of one affinity, and by means of the other bind the complement constantly present in the serum. This latter body, by means of its ferment action, acts upon the cells, causing the softening and disintegrating of these tissues accompanied by the general symptoms of fever, etc. However this may be, and the ferment action of bound complement may well be questioned, his results are important since they demonstrate that the antibody to tuberculin, in other words, anti-tuberculin or amboceptor group, is formed by the cells under the influence of tuberculin treatment and can be demonstrated in the serum with more or less regularity.

The method Wasserman has used to prove the presence of this antibody is that known as fixation of complement, which is briefly as follows: The serum of an animal is rendered immune to the red blood cells of another species. In this manner, one obtains a serum, which, by means of its amboceptor group, will unite with these red cells on one hand, and on the other will unite with and bind the complement necessary for the hæmolysis. The amboceptor is not rendered inactive by heat while the complement is thermolabile; thus it is easy to differentiate one from the other and to show the presence of the immune body.

Thus: If to a serum of a tubercular subject containing tuberculin antibodies a suspension of tubercle bacilli is added presumably will follow a union of bacilli, amboceptor and complement. Now, if to this mixture is added an inactivated im-

mune serum plus an emulsion of the foreign red blood cells, no haemolysis will follow since the complement necessary has been found by the tuberculin antibody. But if the specific antibody were not present in the suspected serum the complement would not of course be bound, and upon the addition of the haemolytic system haemolysis would follow.

The results of these investigations show very conclusively that as a rule no free antibody is present in the serum of tuberculous subjects, but that it can be found fairly regularly in the serum of such patients when treated with tuberculin for a sufficient length of time.

Citron [14], in an exhaustive article on the causes of the tuberculin reaction, differs somewhat from Wasserman in that in common with Weil and others he questions the ability of bound complement to exert its digestive action.

In following the results of tuberculin therapy over long intervals of time he concludes that the reaction of anaphylaxis is the precursor of the active immunity induced by this method. He divides the course into four stages: First, increase of fixed cell receptors corresponding to the stage of hypersensibility. Second, increase of fixed cell receptors and beginning stage of free antibodies in the blood. Third, great numbers of fixed cell receptors and dimunition of free antibodies. Fourth, after long continued injection of tuberculin, anti-tuberculin is found in the blood, together with great numbers of fixed cell receptors and free antibodies at point of local infection.

The practical application of this is as follows: To produce active immunity in tuberculosis, tuberculin must be injected over a long period of time beginning with very small doses, 1/1000 mg. old tuberculin or 1/10,000 mg. T. R., according to Trudean [15], and increasing gradually to many thousand times the original dose, taking great care in the meantime to watch for the minor symptoms of headache, nausea, temperature rise, etc., which, though insignificant in themselves, may show that the limit of toleration has been reached and that the dose must be reduced or omitted until it shall be safe to begin again the gradually increasing doses.

1. Second interim report of the Royal Commission of Human and Animal Tuberculosis. British Medical Journal, Feb. 9, 1907.
2. Home Factor in Tuberculosis. Hazen. Johns Hopkins Hospital. Bulletin Aug., 1907, p. 298.
3. Effect of Eggwhite and Its Split Product on Animals. Journal of Infectious Diseases, June 15, 1907, p. 476. Vaughn and Wheeler.
4. Zur Frage der Eutstehung der Lungen Tuberculose. Schlossman and Engel. Deutsch, Med. Woch., 1906, Nr. 27.
5. Van Steenburg and Sommerville. Press Medicale, 1906, No. 24.
6. Rosenau and Andersen. Bull. Hyg. Lab., No. 23.
7. Pettit. Press Medicale, 1906, No. 82.
8. Vallee-Comp-rend-de l' Acad. des Sci., T. 142, No. 20.
9. Hamman and Wolman. Johns Hop. Hosp. Bull., Aug., 1907.
10. O. Bail Wein Klin. Woch., XVIII, No. 37.
11. Roth-Schultz. Beitrag z. Klin der Tuberkulose, 1906, VI, 167.
12. Zeitschr. f. Tubercalose, March, 1907 (Roepke).
13. Wasserman and Bruck. Deutsch Med. Woch., 22 March, 1906, No. 12.
14. Citron. Berlin Klin. Woch., 1907, No. 36.
15. Trudeau. American Journal Med. Sci., June, 1907.

Discussion.

Dr. Hirschfelder: One of the most interesting facts in this paper was the resume of the report of the British Commission on Tuberculosis. I think they established the doctrine that Koch promulgated that bovine tuberculosis and human tuberculosis were distinct, and disproved his statement that bovine tuberculosis does not invade human beings. Koch appropriated the work of Theobald Smith without giving him credit for the pioneer work that he had done in differentiating the two bacilli so thoroughly. The Germans are divided into two sections, and followers of Koch still maintain that bovine tuberculosis does not occur in human beings while the larger group believe with the British commission. All of the cases in human beings are not due to the bovine, nor has it been clearly proven as yet that the human germ is a modified bovine. It is not impossible that the tuberculosis germ was originally the grass germ. It is not impossible that originally the cow became infected with a grass bacillus, and in passing through the cow the germ became modified and became adapted to life in the cow. The cow germ, in passing through the milk into the intestinal tract of the child or adult, produces that form of tuberculosis which the commission claims belongs to Class 1, which answers to the tests of the bovine tuberculosis. Gradually, during its numerous passages through the cow it may change to the form of the Class 3, and finally, in successive passages through the human body, may become the germ which is called the human germ. This is not at all impossible. However, I think it is very important that the report of this work of the British commission should be spread, and I think that the fear that the people will be too much frightened should hardly keep back this report any longer. I think the danger is that they will not be enough frightened.

WHEN IS GONORRHEA CURED?*

By JOHN C. SPENCER, M. D., San Francisco.

It is a simple answer to the question, "When is gonorrhea cured?" to say offhand, "When the gonococci have disappeared from, or are no longer demonstrable in the patient's secretions."

Upon this bald statement, however, depends a responsibility that is second to none in the entire realm of medicine; one that calls for the highest degree of patient and painstaking perseverance and diagnostic technic. So much depends on our dictum in the pronouncement of a final cure of this social curse, that the responsibility almost appalls.

If the proper education of the lay-public as to the seriousness of gonorrhea is to be brought about, it must surely be by the physician. Our moral weight is doubled by virtue of our dual position of father-confessor and medical adviser. Thus a judicious elucidation as to the nature and pathologic possibilities of gonorrhea, may be used to fit each individual's mental capacity, and emphasized from time to time.

The widespread fallacy among the ignorant, that the cessation of the urethral discharge means the termination of the disease, should be vigorously negatived.

Relatively it is this very complacency as to the disappearance of only the more striking of the objective symptoms, which is responsible for the

* Read at the Thirty-eighth annual meeting of the State Society, Coronado, April, 1908.

failure to cure gonorrhea. The superficiality of some colleagues admits of such inaccuracy, as the attempt to treat a patient with a urethral discharge following impure coitus, without that most essential aid, the microscope. As well attempt to navigate a vessel upon the open sea without a mariner's compass. Such methods reduce medical science to the level of mere guesswork, in which the lay-opinion is of equal importance with that of the medical man.

Let us assume then, that the diagnosis of gonorrhea has been established by the examination of a smear of pus from the male urethral meatus; or from the female urethra by gentle stripping per vaginam; or from Skene's glands; or from the orifices of the ducts of Bartholin's glands; or from the canal of the cervix uteri. In searching for unusual sources of re-infection, it should not be forgotten that some men have para-urethral follicles which open on the lip of the external meatus, 1-2 mm. from the edge. Secretion from these may be so scanty as to be overlooked. On careful search, such aberrant glands may be found and the secretion expressed will show gonococci. These may be a ready source of re-infection of the urethra.

It seems almost superfluous to remark in passing, that the pus should be collected either on a sterile platinum loop or a small cotton swab, and not by attempting to get the smear by direct application of the glass. In the female this latter is practically impossible. In the male, the meatus is apt to be smeared with pus which swarms with saprophytic bacteria. These tend to confuse the findings somewhat. Gentle vertical pressure of the meatus between the thumb and forefinger will usually bring a fairly copious fresh drop of pus into view. The sample should be from this. A great saving of time and fragile glassware may be accomplished by making these smears directly onto a clean glass slide. Fix by the usual quick triple dash through the flame; dry, and drop the immersion-oil directly onto the specimen.

The well-known coffee-bean shaped, intracellular diplococci are usually so abundant in urethral pus as to offer no difficulty in finding them. In the cervix uteri it may be necessary to use a blunt curette very gently on the cervical mucosa if gonococci are not readily found at first. Secretions from the prostate and seminal-vesicles obtained by massage with the cot-covered finger in the rectum, because leukocytes may be scanty in them, should be centrifuged if possible. The sediment thus obtained avoids much of the concomitant mucus.

The stain used may be a solution of any one of the basic aniline dyes. For further security, the so-called Gram method of staining may be resorted to. The only absolute diagnostic criterion is the culture on blood-agar or serum-agar. For the latter purpose the glands should be most carefully cleaned with liquid soap and a cotton pledget. Then a careful gentle irrigation of the first two cm of the urethra should follow, in order to remove saprophytes as far as possible, which could confuse the growth. The specimen should be collected from secretions stripped from the deeper parts of the anterior urethra. After 24 hours in the incubator at body-temperature, the characteristic minute glistening colonies of gonococci will be evident.

Secretions should be examined at intervals of a few days microscopically by way of control. As time passes, the discharge, no longer spontaneous, must be obtained by stripping the urethra from the bulb forward secundem artem, collecting the drop at the meatus. Failing in this, we must resort to the expedient of having the patient urinate into a conical glass and by deft aspiration of the floating shreds into a pipette, transfer them to a slide and so stain.

It is well to bear in mind that immediately or shortly after an injection or irrigation, there is liable to be a decided increase of the muco-pus discharge, hence the gonococci on the surface are either swept away, or may be more or less morphologically altered, due to the action of the drug used. For the latter reason disturbing artefacts or precipitants may be formed, interfering with the ready recognition of the gonococci. Hence the search should be made preferably at a time remote from treatment.

As time passes, the urine will clear and the shreds will greatly diminish in size, shape and number. If from the anterior urethra, they will tend to assume long stringy shapes due to the large admixture of mucus. Ultzmann used to say, that this shape was characteristic of the location of the process in the anterior urethra, and that the rather small crumby, comma-shaped floccules were characteristic of the location of the lesion in the deep urethra and prostate. This is true in a measure but not an absolute criterion. Long familiarity, coupled with more or less sharply marked clinical signs, enables the average urologist to draw certain corroborative conclusions from the appearance of the various shreds seen microscopically in the urine. Both gross and minute appearances have been described and discussed in an elaborate article by Saxe, published in the *N. Y. Medical Journal* of March 2nd, 1907.

This declining period of the disease requires the exercise of our wisest judgment and care in expressing an opinion as to cure.

With the subsidence of the subjective symptoms, the patient is apt to chafe at restraint and wants to resume his former mode of life. The classic test of former days, was a night spent in venere et baccho. If no increase in the discharge ensued, and there were no subjective symptoms in the urethra, a cure was assumed. This plan is happily a relic and is seldom or never resorted to in these enlightened days.

It not infrequently happens that what seemed an ordinary gonorrhea confined to the anterior urethra, has, unobtrusively and with few or no symptoms, extended into the prostate and seminal vesicles. Many authorities assume eo ipso, that a duration of the disease of six weeks or longer is followed by its extension to the prostate or seminal vesicles.

These are the cases which show clear urine upon the two or three glass test, yet have apparently inexplicable relapses. As these relapses become less frequent or cease, the medical attendant, lulled into a sense of false security, may be tempted to raise the embargo and permit the patient to resume his former mode of life or to marry. These are the supposedly clean cases responsible for binding many an unfortunate bride to a gynecologist's office and more than often placing her upon the operating-table the subject of an abdominal operation.

It must not be forgotten that all secretions in front of the compressor urethræ muscle find their exit through the external meatus. All such back of this muscle, find their way backward into the bladder. Preliminary search should be made through the endoscopic tube for possible individual infected glands or follicles. Any droplet of mucopus appearing in their mouths should be aspirated through a long capillary aspirator, transferred to a slide and stained. Should this procedure be negative, then a ½ to 1% solution of silver nitrate in the urethra may be used to set up a degree of irritation sufficient to cause gonococci in the deeper inter-epithelial spaces to be swept up to the surface and so out to the meatus. If this result negatively, then a thorough stripping of the prostate and seminal vesicles by the cot-covered finger in the rectum must be resorted to. The fluid thus obtained should, if possible, be centrifuged. This sediment should be very thinly and evenly spread on a slide, since the relatively large amount of mucus present tends to take up too much of the stain, making it rather difficult to distinguish the gonococci. Since there is a scanty number of puss-cells usually present in these secretions, and since but few of them in the chronic conditions, may contain gonococci, unless the fluid be centrifuged, the probability of finding the organism is proportionately reduced. Cowper's gland must also not be overlooked. Its secretion may best be obtained by pressure in the perineum between the anterior limit of the tuber ischii and the deeper part of the urethra.

If gonococci are not discoverable in shreds obtained at the meatus, or from the urine; or through the endoscope; or from the prostatic fluid or semen; if the patient's urine be wholly clear to the naked eye, although the cenrifuged urine show a few puscells; if the resumption of the patient's ordinary mode of life, including the ingestion of urethral irritants, such as alcohol and certain foodstuffs; if upon careful search, all these factors yield a negative result, then the patient may be advised to indulge in coitus condomatus, the contents of the condom being reserved for critical examination. The violence of the orgasm may serve to bring to light gonococci from the prostate or vesicles.

If all these possible foci of infection are explored diligently, and no gonococci are found the patient may be pronounced non-infectious.

It is not to be denied, that some patients may continue to show one or two shreds in the urine without other clinical symptoms even when, by various tests, we are certain that they are no longer contagious. It is also not to be denied, that in some patients we are never able to successfully get rid of this one last shred. Clinically, it appears to be without pathologic significance, hence it may be disregarded.

WHEN IS GONORRHEA CURED?*

By G. SHERMAN PETERKIN, M. D., Seattle, Wash.

As Nine-Tenths of All Physicians, by Their Acts, Demonstrate That They Consider Themselves Competent to Pronounce When Gonorrhea Is Cured, and the Laity Believes Every Physician Is Competent, What Attitude Should the Genito-Urinary Specialists Assume Toward the General Practitioners on This Question?

Why should this question be put?

Briefly,—1. Gonorrhea is a dangerous disease.
2. It is very prevalent.
3. It is detrimental to the welfare and progress of the individual and State.

As proof of the above statements and premises for argument, I shall reiterate trite statistics.

80% of all operations upon women for diseases of the ovaries and womb are due to gonorrhea.

20% of all natal blindness.

80% of all men in large cities have this disease at one time or another.

45% infect their wives.

45% of all involuntary childless marriages due to same disease.

And this disease, gonorrhea, is a preventable disease. Prevention here has one synonym, "education." Education of mankind in the laws of sex. Carried to a successful termination, results are to be accomplished through every human being's observing the laws of morality. The end sought is idealistic; when attained, admittedly, it will be the millennium. Nevertheless, it is the rate of pursuit of the ideal that advances the rate of evolution. It is action governed by the correct interpretation of the principles of natural laws that leads ultimately to success and it is a universal law that the advancement of mankind is in proportion to the degree of education, i. e., knowledge and compliance with the principles of natural laws; therefore, it stands to ason that as possessors of the original source whence this knowledge to educate must come, that we, physicians, must pursue the ideal; though the material results are not apparent; but,—necessity makes the practical the problem of today, and demonstrates the primary step to be taken in this direction,—the performance of our first duty, which is to the present generation.

To the genito-urinary specialists, figures designate the practical problem,—80% of avoidable operations, 20% of avoidable natal blindness, etc. In words, had a suitable test for cure been applied to the males infected, the above percentages would, unquestionably, have been smaller. This is a fact

* Read at the Thirty-eighth annual meeting of the State Society, Coronado, April, 1908.

reasoning logically. Obviously, as the percentages relate only to the cure of disease, it is a problem that duty demands the medical profession to solve.

There are in the states of California, Oregon and Washington, in round numbers, 3,000,000 people; practising physicians, 6500; genito-urinary specialists, 30. Of this population, estimated by the U. S. Census Bureau ratio, there are 1,536,000 males. Eighty per cent, or 1,228,800, will have gonorrhea at one time or another. There are 30 specialists whose work is not wholly limited to gonorrhea. On an average, these specialists will not see, reckoning on the basis of a month's time, more than 30 new cases. Multiply this by 30, we have 900 cases seen a month by specialists. If, say, one-half of the male population who are liable to gonorrhea, (614,400) have gonorrhea during this one month and the specialists see only 900, who is to care for the remaining 613,500 cases? The remaining 6345 general practitioners (125 deducted as eye and ear specialists, as they probably do not treat this disease). Of these 6375 physicians, in the three states, the specialists can and perhaps try to apply a thorough test for cure. The remaining 6345 physicians, because of imaginary difficulties of technic, lack of facilities or knowledge, do not even make the attempt. So! if there are 30 specialists and 614,400 gonorrheics, it stands to reason, the specialists can and do see only an infinitely small percentage, the vast majority being cared for by the 6345 general practitioners and druggists. The general practitioners neglect, because of the aforesaid reasons, applying a thorough test for cure, so the percentages are still 80% of preventable operations, 20% of natal blindness, etc.

Briefly recapitulating:—

1. The spread of gonorrhea can be lessened by inaugurating a test for cure that the general practitioner can use.

2. The inauguration of said test is a problem for the medical profession, not the laity.

3. It is absolutely impossible for the g. u. specialists because of limited number, and extent of the disease, to come in contact with even 95% of the gonorrheics.

4. The greatest amount of experience, knowledge of this disease and means of providing tests, etc., are possessed by the g. u. specialists.

What conclusions are to be drawn? One, and that,—it is "up to" the g. u. specialists to educate the general practitioner who has not the time, facilities or opportunities.

Can tests be simplified and rendered competent? *Yes.* But the first step toward this end is to remove the mystical and sophistical veil of higher erudition with which the specialist surrounds himself, his work, or both; that mankind may come to worship only at his individual shrine, because Divine Providence (?) as his worshipers have had mysteriously impressed upon them has endowed that particular apostle of Aesculapius, with superior wisdom or intellect that is beyond the ken of other mortal students of medicine, when in reality, the practice of medicine is a question of application and intellect as are all other vocations.

Perhaps I am ambiguous, but the general practitioner who desires information as to a test for cure and seeks the same realizes the significance of the foregoing paragraph.

The information may be received, if so, it is a dissertation bristling with scientific technicalities, demanding facilities that he does not possess and cannot possibly afford; yet offering no alternative for the same; but,—there is the postcript, elaborating upon the innumerable difficulties of application by the inexperienced. The general practitioner can but feel its application impractical or liable to result only in failure or perhaps, still hopeful, he writes others, asking references whereby he can obtain the facilities required or such information that he may formulate a test himself. In return, there is a kindly reference to "my test in my text book," where many details are omitted, or another scientific article filled with different terms for the same thing and special technicalities which are just a little different from anyone's else, but essential to the successful application of aforesaid test. The result? The general practitioner believes all tests impractical, and becomes an obstacle to progress by his enforced inactivity.

Practically, it is that we place ourselves on a pedestal, as willing to supply a luxury,—superior, unattainable, knowledge, instead of the necessity—true knowledge which is simplicity.

The general practitioner does not, nor is he permitted to realize the fact that incongruity of methods is but different means to the same end, which do not nor never can change the general principles underlying the laws governing the life of the gonococcus, and the anatomy and physiology of the genito-urinary tract.

Yet, it is not only the employment of different means to the end, but the empiricism found in the ever ready explanation of physicians', "I do so and so" or "do so and so, because Dr. Kackiac, noted, does so and so," without demanding, stating or seeking the underlying principles and premises from which conclusions are drawn; or more explicitly, it is the routine application of memory to individual organic life, instead of the reasoning faculties, that retards advancement through perpetuating means or methods instead of principles.

Rome may be reached by land, water or air; by direct air-line, designated roads or little known by-paths. The means of conveyance may be fitted with luxuries, or contain bare necessities; be it steam, electricity, horse or afoot; but,—Rome will be Rome, when every traveler arrives. So it is with the test for cure, the various means aim at one and the same object,—the location of the gonococcus. The means of obtaining that end may vary, as those that lead to Rome. In selecting the means, the logical physician and educator does not overlook the natural law which permits to the few the luxuries of life,—in this instance, the more advanced knowledge as to cure, as culture test,

etc., and limits the vast majority of mankind to the necessity, microscopical observation.

Reasoning thus, I shall, in a general way, outline a course, which if pursued, I believe, will undoubtedly obtain the results sought, the lessening of gonorrhea, by elucidating and demonstrating the general principles which underlie and govern the technic of all tests, and cause them to be generally applied.

What end is sought in a competent test for cure? The conclusive demonstration of the absence of gonococcus in the genito-urinary apparatus of the individual. If this be all, why the difficulty of examination?

Reasons, three:—

1. Size of the germ.

2. Topography of the country which it inhabits.

3. Its habit of burrowing underneath the surface.

Knowing this, proceed by ascertaining the topography of the country, where and how the germ burrows. That is, devise means by which the germ can be located and obtained.

The principles governing the means, three (3) in number:—

1. Press the germ out of his hiding place into the urethra.

2. Dig him out from beneath the surface, i. e.—the epithelium cells.

3. Give him such food that he will multiply in sufficient numbers so as to be more readily detected.

These general principles govern every examination; they are simple and any one knowing the above, can develop or apply a method which is efficient, especially can he so do, when furnished with the knowledge of the various means to this end.

To illustrate, take a diagrammatic sketch of the topography of the genito-urinary tract. It is a canal. Going from the meatus to the bladder, leading into it, are numerous openings to the glands of Littre and lacunæ of Morgagni. Next in order, are the openings into Cowper's glands; then comes the antiquated barrier, in the light of modern knowledge, the sphincter urethræ that serves only to keep the discharge from gravitating backward, but not the *germs,* which burrow underneath its margins. In this portion of the canal, posterior to this barrier, are the 16 to 20 openings of the prostatic ducts, likewise the ejaculatory, that lead into the seminal vesicles. At these organs, our interest in the topography ends, for from the commencing of the vas deferens, at the seminal vesicles, to the termination of the testes, we have no means of obtaining the germs therein hidden, and we must depend upon nature to cut off or destroy, as she does in the ovarian tubes. In all these localities, the germs may hide and burrow beneath the surface, either in the canal proper, or in its byways.

First, we will consider the canal proper, the urethra. Its diameter varies, as does its dilatability, from 22 French in its narrowest portion to 45, or even greater in the widest. Its surface is infolded. Moreover, the openings into it are innumerable minute openings of the glands and lacunæ before mentioned. In these tracts, the gonococcus hides and in the recesses formed by its infolding, or caused by induration or strictures.

How is the germ to be pressed out?

1. Stripping the urethra.

2. Voiding urine, meatus compressed,—thus are the folds obliterated and the gonococcus washed from between them and from behind induration, etc.

3. Dilating the canal with a Kollman dilator, which empies the urethral gland by compressing it at right angles and its efficiency lies in its varying shapes and the ability to stretch the canal beyond its normal in any portion.

4. Sounds. Use largest size possible and massage along the whole canal thoroughly with index finger and thumb, thereby emptying glands, obliterating recesses, etc., by pressure against the sound. This means necessitates more time and a thorough knowledge of the gullies and recesses.

Next are the byways, Cowper's glands, prostate and seminal vesicles.

How are the germs to be pressed out here?

(a). From Cowper's glands, by massage on sound or dilator as previously stated.

(b). From prostate and seminal vesicles, by massage with finger. But the prostate's anterior posterior diameter is 1 inch; its apex, 1½ inches from anus. Distance from anus to posterior border, 2½ inches; from posterior portion of prostate, seminal vesicles extend 2 inches; therefore, distance from anus to their posterior portion, 4½ inches. No finger is 4½ inches long, therefore, the question becomes one of reducing distance that pressure may be exerted efficiently.

Means:

1. No ejaculation, 3 days,—equals vesicles distended to full size.

2. Bladder filled to capacity,—equals vesicles pushed near anus.

3. Dorsal position, legs flexed, everted, and relaxed, shortens distance by permitting perineum to be stretched.

4. Trunk semiflexed, abdominal viscera pushes distended bladder near anus.

So far we see any examination is a question of pressure and means of applying it successfully. One specialist may advocate the dilator; another, the sound; both may obtain equal results, knowing the object sought. So in massage, one may say one position, another, another,—but practically, it is a question of distance and length of individual finger. So it is possible to proceed to the end, elucidating principles, systematizing means, both of digging the germs beneath the surface and giving food that they will multiply in sufficient numbers to be detected.

Stating these (and the cost in material, time and labor) in language that can be not only understood, but well evoke interest,—and the needs, criticisms and suggestions then offered by the gen-

eral practitioners will more quickly lead to what will be truly a simple test for cure.

To end, as all medical colleges give practically no instruction on this subject, the attitude of the g. u. specialists toward the general practitioners, on this question, "When is Gonorrhea Cured?" should be, as ultimately it must be, one of broad educational co-operation, whereby, not only will humanity be benefited, but our profession and ourselves. And this is to come, first, through the removal of antiquated customs and traditions, of conducting ourselves and our practice so as to individualize the means to an end, thus making medicine appear a fine art, when it is a science, and every follower is an interpreter of natural laws by the principles of which one and all must be governed.

Discussion.

Dr. Saxton Pope, Watsonville: The question which arises with regard to the cure of gonorrhea is whether it is the absence of the germ or lack of virulence. If we compare it to other troubles we know that a man can have typhoid bacilli in his gallbladder and still be free from typhoid. But can a man have gonococci in his system and still be cured of gonorrhea? It may be possible that he may have domesticated gonococcus. The gonorrheal prostate and seminal vesicles may be the seat of secondary infections. I have seen this occur where the secondary infection with the colon bacillus in a case of glycosuria lighted up an old gonorrheal process. A diabetic contracted gonorrhea twenty years where there was no gonococci apparent but the wife had a chronic leucorrhea and this started up the gonorrheal process in the prostate and gonococci appeared in the discharge. If we go on the presence of the gonococcus we may be misled for it may be innocuous. We have to demonstrate that it is virulent gonococcus. By the opsonic registration we may know whether a man is infected but by that means we only determine his reaction to that particular germ. The only practical test must be experimental.

Dr. A. B. Grosse, San Francisco: I must certainly agree with Dr. Spencer, who has tersely laid down the fundamental laws in his paper, but beyond all this the segregation and experience of one's material along these lines must really be the answer to the above problem. During the last eight years a great many male patients have been referred to me with the query if it were safe for them to marry. Others came complaining of shreds in the urine or a very small amount of discharge. In all these cases a number of microscopical examinations were made as well as repeated cultures. Where gonococci were found, treatment was instituted until this line of examination would prove negative. Cultures if negative to the gonococcus would most frequently show pseudo diphtheria bacillus, staphylococcus albus, streptococci or tetrads.

In several of the cases it was impossible to eradicate the gonococcus and the patients married in spite of the warning given. I have been able to learn only of three of these. Two have not infected their wives up to date. One has two children and the other one. In both these men I have recently been able to demonstrate the gonococcus beyond doubt. The third one infected his wife. The wives of the first two have been repeatedly examined by gynocologists who had received the necessary information from me.

Of the cases where the gonococcus was not demonstrated after repeated and exhaustive effort, I have been able in two cases by getting into communication with the obstetrician to get a report of the presence of the gonococcus in the cervical secretion.

My experience with vaccines is very limited, but the following case may prove of interest. A man with a chronic urethral discharge lasting eight years or more, in spite of all treatment. Repeated cultures demonstrated regularly the pseudo diphtheria bacillus in pure culture. A vaccine (homologus) made from this micro-organism injected in a dose of ten million, once a week and gradually increased to twenty million, practically stopped the discharge after the first dose and now, several months later, we have been unable to get any growths from the scanty secretion remaining.

In closing, I wish to emphasize that while as yet we have no absolute method, if we follow out the regular routine examinations conscientiously, we come so near getting positive results, that I tell my patient after examination with negative result, that barring accident, he may marry with impunity.

Dr. Granville MacGowan, Los Angeles: The question of gonorrhea is a very serious one with us. Today we have two standpoints. One the standpoint which Dr. Peterkin has given us which is the standpoint of every specialist, and the other the standpoint of the layman. Whenever a man ceases to have a visible gonorrheal discharge he believes that he is well and there is nothing in the world that can induce him to believe that he is not well. The complaint which the woman makes when she comes to us is the discharge. Just as soon as she is rid of it she thinks that she is well. About two years ago Dr. Smith referred to me a friend of his of about twenty-four years of age. He had gonorrhea and that gonorrhea had passed into the prostate and seminal vesicles. After I had treated the case for a couple of weeks Dr. Smith took charge of the case again. About six weeks afterwards the young man came to see me and he still had a slight discharge. He said that he wanted my opinion as to whether he could get married. I told him no and described to him all of the troubles which he might make for his wife. He said that he must get married, that he was engaged and that the wedding had been announced, and that it was during the time of his engagement that he had contracted his gonorrhea. He said that he could not at this time delay the wedding. I advised him to tell the young woman's father. Finally a family conference was held and it was decided that the young people marry but live apart with regard to the sexual relations. The girl's father was a wealthy, well educated and intelligent man and if we cannot teach such men, what are we to do with the ignorant laborer?

Dr. Spencer, San Francisco: With regard to the comments of Dr. Pope I think they are exceedingly timely. We are not able to say when gonorrhea is cured in so many instances because the criteria by which we are apt to judge, that is the scientific criteria of the laboratory and clinical symptoms, may point to the gonorrhea and at the same time the question comes up whether gonococcus is pathogenic for that individual. It is probable that in the experience of many of us, the pathogenicity of the gonococci seems to be so far destroyed that it does not infect the wife. Whether this is the result of long cultivation and thereby the removal of the disastrous effects, we are not able to say. Medical chemistry has not reached that point of refinement by which we may say that the gonococcus is not pathogenic for the new wife. It is true that the long existence does not seem to bear an intolerance in the individual and a non-toxicity. I have had young men come and ask me to cure them wanting to be married in a short time. I have told a man that this is impossible, that he will sacrifice the health of his wife. We physicians must stand as

educators. The public thinks that as soon as the discharge stops it is all right. The lay public is so indifferent that it does not care. We have to keep hammering to make the public understand that the disappearance of the discharge is the simplest feature of it. The lay public must understand that there is more to the gonorrhea than the urethral discharge. In conclusion I think that we have a sociologic problem before us. If parents who have marriageable daughters would have them educated by the family practitioner as to the seriousness of the marriage relations, and if the father would go to the son-in-law, and ask for a definite report from some physician whose opinion was of value to the effect that he was sexually clean, this problem would be helped to be solved.

Dr. G. S. Peterkin, Seattle: I am glad to see that we are at least reporting progress on this subject. The specialist has started to educate the people when he tells them of the seriousness involved in this disease. It does not matter whether his patient disobeys and marries in spite of his advice. The seed has been sown because when the ill health of his wife is before him a few months later he will remember what he was told before he was married. In that way we are at least starting the education of the laity. We can at least teach these patients that it is incorrect to believe that they are cured when the discharge is stopped.

SEBORRHEA AND ITS SEQUELAE.*

By ERNEST DWIGHT CHIPMAN, M. D., San Francisco.

Possibly no disease of the skin is considered more banal and innocuous than seborrhea; and yet a large number of the cases seen by dermatologists are of definite seborrheic nature or in some way are related to what may be called the seborrheic state.

The purpose of this paper is to indicate the wide extent of seborrheic disease; to discuss certain phases of the same; and to suggest a not unimportant role which it may play in the production of malignant diseases of the skin.

At the outset it must be stated that widely different views are held concerning seborrhea, its nomenclature, its etiology and its treatment. These divergent views are of great academic interest but in a discussion meant to be clinical much time will be saved by agreeing upon certain attitudes in advance.

For the purposes of this paper, then, let us proceed upon that basis which limits the meaning of the word seborrhea and thus defines the disease as a condition of excessive oiliness of the surface regardless of whether that oiliness emanates from the sebaceous glands or the sweat glands. Let it be assumed that the disease is microbic without reference to the microbacillus of Sabouraud or the morococcus of Unna. We may then proceed to the consideration of some definite pictures formed at different epochs in the course of seborrhea.

Upon the scalp there is a well defined series. First of all a simple scaliness is observed. The scalp is dry and irritable, the hair lusterless and the scales which are epithelial are thin, branny and fall readily. There is no appreciable loss of hair. This condition, while considered by some as *seborrhea* is in reality only *preseborrheic* and is better named pityriasis capitis.

Next the scales take on a greasy aspect and become adherent to the scalp. No longer are they purely epithelial in character. A certain fat-like substance has been added. The hair, formerly harsh, now becomes more supple and falls out not in any special location, but diffusely; there is a gradual thinning-out process. The oily character of the scales varies in degree so that some of the less oily forms have been described as waxy. To this condition in its varying degrees the name seborrhea sicca has been applied. By the majority of writers this condition is so named but Sabouraud calls it *steatoid pityriasis*. This is by far the most common scalp condition encountered and in women it represents as a rule the final number of the series. In men, however, after the scaliness has disappeared in a process covering a number of years, comes the third picture of the series. This is constituted by a simple condition of excessive oiliness—nothing more except that the hair, already thin, shows a greater tendency to fall, particularly at the vertex. If, for this condition of simple excessive oiliness, not only on the scalp, but elsewhere, we reserve the name seborrhea the entire question becomes simplified.

The sequel to this condition is seborrheic alopecia. It has been noted by Sabouraud that in the rare cases where women have been affected by this condition the subjects have been of a somewhat masculine type as evidenced by such tokens as incipient moustache and deep voice.

This whole series may proceed from beginning to end without once showing a clinical sign of inflammation. Under the influence of some special exciting cause, however, inflammatory elements supervene; the scalp and even the adjacent skin is reddened, thickened and covered with greasy scales making up the condition known as seborrheic eczema or seborrheic dermatitis.

We have seen that upon the scalp the seborrheic sequence begins as scaliness out of which is evolved true seborrhea. Upon the face and the body in general the relation is reversed, pure seborrhea occurring as the primary affection, the condition in which other dermatoses find their origin. In passing from the consideration of seborrhea of the scalp, however, to that of the face and body one point must be particularly emphasized, namely, that seborrheic affections wherever found are to be considered as consecutive to seborrhea of the scalp.

After the scalp the favorite locations of seborrhea are the face, the sternal region, the area between the scapulæ, the axillæ and the inguinal folds. From seborrhea as its exists in these localities two classes of condition may arise—the non-inflammatory and the inflammatory. The former group is represented by such conditions as comedones, milia and sebaceous cysts and calls for no special remark. The group of inflammatory dermatoses is classified by French writers under the convenient name of *seborrheides*. These inflammatory conditions are sequels of true seborrhea and assuming seborrhea to be due to a

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

definite bacillus represent an added infection. In this country they are commonly included under the one head of seborrheic eczema although French authors classify them as eczemaform, psoriasiform and so forth according to the disease which they most closely resemble.

Without attempting the finer distinctions we may interpret as seborrheic eczema thickened, reddened patches which may be regular or irregular in form but which have sharply defined margins and are covered with greasy scales. Between the typical seborrheic eczema with its characteristic yellowish greasy scales and the typical psoriasis with its silvery dry scales the distinction is clear but the less typical forms of each disease merge so insensibly into one another that the differentiation, particularly from the lesions alone, may be extremely difficult. Indeed Walker of Edinburgh contends strongly that the two diseases are identical.

True eczema may be differentiated from the seborrheic form as follows:

True eczema does not affect particularly the special seats of seborrheic disease. True eczema itches severely, seborrheic eczema only slightly. True eczema has poorly defined margins—in seborrheic eczema the outline is sharp. In true eczema there is at some time an exudation of serum—in seborrheic eczema this is absent. True eczema is wanting in the greasy aspect which is special to the seborrheic variety.

Certain individuals seem to be subject to seborrheic affections just as others are inclined to gouty or rheumatic symptoms, one manifestation after another following in definite sequence. This is especially noticeable about the face.

Beginning in adolescence the face becomes oily and appears shiny. About the nose particularly the pores become unduly prominent. Finally some of the pores or ducts become occluded and the face is dotted with blackheads. These blackheads becoming secondarily infected, papules and pustules of acne vulgaris are formed. Without vigorous treatment the acne may persist to young adult life and sometimes well along towards middle age. Following come the seborrheic disorders of the bearded region chiefly evidenced as greasy scaliness at times quiescent and at times aggravated. Coincidentally the scalp sequence has been steadily approaching or has become seborrheic alopecia. The entire picture represents what may be called the seborrheic state.

As the subject of this series passes middle age he becomes more and more prone to circumscribed patches of hyperkeratosis or hypertrophy of the stratum corneum. These patches are often called *senile keratoses*. More rarely cutaneous horns occur. There may be no histological relation between these affections and seborrhea but their most frequent occurrence in subjects of the seborrheic state is clinically incontestable. Their relationship to various forms of cutaneous epitheliomata is so generally conceded as to justify their grouping under the head of precancerous affections.

Along with this same group, occurring in the same subjects, certain crusted patches are seen. Often they develop upon a small keratosic area. They occur not only in subjects of seborrheic life history but affect especially those situations most particularly favored by seborrhea, and carry with them crusts of the same greasy quality which we are accustomed to see in the seborrheic disorders. Upon removing the yellowish, greasy crust an ulceration is found upon which the crust is quickly renewed.

We are now dealing definitely with an epithelioma and the series which began with a commonplace dandruff or an oily nose has passed through successive phases until malignancy is attained.

Let the conclusion drawn from this presentation not be unwarranted. One who watches the development of seborrheic disease, sees the manifold phases which it demonstrates in itself, sees how it modifies the appearance of other concurrent dermatoses, must be impressed with its potentiality. While the etiology of cancer is unknown we may be at least permitted to infer from the abundance of clinical evidence that the seborrheic state renders the skin much more than ordinarily vulnerable to the epitheliomata.

The obvious moral is that just as we excise moles and pigmented nevi for fear of subsequent malignancy, just so should we treat radically the group of precancerous affections related to seborrhea, but better yet treat early and persistently all seborrheic manifestations, directing special attention to the scalp as their ultimate source.

As the disease is of bacterial origin local treatment is generally sufficient. General conditions may play an important part in the production of such sequels as seborrheic eczema and there the treatment is along constitutional lines according to the indications which exist. In pure seborrhea sulphur and resorcin are the most generally reliable remedies. For the more scaly forms of scalp disease the tar preparations are indicated.

CLINICAL FEATURES OF INFLUENZA SINCE THE PANDEMIC OF 1889-1890.*

By HERBERT C. MOFFITT, M. D., San Francisco.

When the kind invitation from your committee came to me a short time since to read a paper upon opsonic work and bacteriotherapy, it was accepted without due consideration. It needed little reflection to demonstrate that my personal experience has been as yet entirely too meagre to admit of a paper of any value. We all too hastily try to assimilate and incorporate new teachings; any new method of investigation or treatment must, after all, be judged by the results of one's own work with it in the clinic. Although encouraged by results of some cases of vaccine therapy, it seems wiser for me at present to counsel discrimination and caution with the method rather than to encourage its widespread application to general practise. With this apology for not spending time with a subject so recently introduced and still waiting credentials, it is my hope that a few minutes may profitably be spent in recalling certain features of an old and familiar friend.

* Read before the Santa Clara County Medical Society, May 20, 1908.

"Influenza," like "rheumatism," has been a term most generously misapplied. It should be recognized that the affection so often described as "clinically typical influenza" is frequently due to infection with pneumococci, streptococci, staphylococci or micrococcus catarrhalis. Some weeks ago a young woman was seen in San Rafael with a peculiar lung condition. She had been ill for three weeks with cough, temperature, great prostration and most unusual cardiac depression. The signs in the lungs had been equivocal, variable bronchitis and shifting areas of atelectasis and edema. When seen she was cyanotic, markedly dyspneic with normal temperature and a pulse of 120; there were no patches of consolidation, but over many areas a tympanitic note with faint breathing and multitudes of fine, dry and sticky rales. The sputum was profuse, greenish and purulent. In light of several cases seen recently, there seemed little doubt that influenza best explained the clinical picture, but nothing was found in the sputum but pneumococci and staphylococci. The convalescence has been as tedious and depression as marked as in true influenza.

D. J. Davis [1] has recently emphasized anew how rarely influenza bacilli are found in the cases reported as "typical clinical influenza," and Jehle [2] lately reported a grippe epidemic due to micrococcus catarrhalis. Despite the temptation to bring many indefinite febricula, gastro-intestinal attacks and obscure nervous symptoms under this convenient cloak, therefore, it is wise to demand that the diagnosis influenza rest at least in part on demonstration of the bacilli. We no longer believe, however, with Wasserman [3] that "Wo Influenza Bacillen, da ist Influenza." For the present it is best to regard as influenza bacilli the many varieties of closely related organisms that have been described under the names of "pseudo-influenza bacillus," Jundell's bacillus catarrhalis, Mueller's trachoma bacillus, Eppendorf's pertussis bacillus, and to recognize that they may frequently be found in the sputum without any clinical evidence of influenza. Pfeiffer [4] described chronic forms of influenza lasting weeks or months, and occurring most often in patients with lungs rendered less resistant by previous disease. Kretz [5] in 1897 showed that in forty-seven patients with influenza bacilli in the sputum only twelve had any clinical symptoms of the disease. Kruse, [6] as did Pfeiffer and Wasserman, found influenza bacilli over long periods in phthisical cases with cavities. Jehle, [7] Liebscher, [8] Davis, [1] Auerbach [9] and many others have written of the frequent occurrence of the bacilli in the tonsils and as a mixed infection in scarlatina, measles, varicella and diphtheria. Lord [10] writes: "In a series of 186 sputa, from cases unselected except to exclude those with tubercle bacilli, organisms resembling influenza bacilli were found in 59 per cent and in almost pure culture in 25 per cent. In eight patients their constant presence in the sputum was demonstrated for two and one-half years." Influenza bacilli in the sputum, therefore, by no means always indicate the disease influenza, and so-called typical influenza may be due to infection with other organisms. Here, as elsewhere, diagnosis rests solidly only upon the proper union of the laboratory with the clinic.

Since the pandemic, the respiratory type of the disease has probably been of most frequent occurrence. It is the most interesting, as being the most capable of definite proof, and will be the form chiefly considered in this paper. Those who wish descriptions of the varied types of the disease during the last years may read the entertaining symposium in the *Practitioner* of January, 1907, the article of Lord in Osler's Modern Medicine, and the excellent paper of Ortner in the *Deutsche Klinik*.

Why there should be definite influenza years we do not know, any more than why the virulence of other infections varies. This has been an influenza winter, and a number of cases of interest have been observed. They are best dealt with under the headings of

1. Influenza Bronchitis.
2. Influenza Pneumonia.
3. Bronchiectasis with Influenza.
4. Influenza as a Modifier of Other Affections.

1. Influenza Bronchitis. Some months ago a young man was referred to me by a throat specialist on account of paroxysms of cough that had been added to a rhinitis and pharyngitis of two weeks' standing. The cough was tremendously distressing, occurred in racking attacks, was most often dry but at times brought up large mouthfuls of greenish sputum. There was no temperature, but the man felt wretched and was perfectly willing to give up his active business. Beyond hyperresonance of the chest, there was little on examination save a few piping rales beneath the right clavicle. Influenza was suggested by the violence of the cough, and the sputum showed almost a pure culture of the bacilli. A mistake was made in sending the patient South instead of to bed; convalescence was slow and the cough persisted for weeks. Last year a woman was seen complaining of severe cough, anorexia and prostration. The illness had started acutely two weeks before with cough and slight fever. There was no temperature while under observation, but distressing cough, profuse expectoration and drenching sweats. Influenza was suspected from the peculiar chest signs, and the profuse purulent sputum gave a pure culture of the bacilli. Respiration was 30 to the minute. There was a remarkable bronchitis confined to the upper right lobe. This was hyperresonant and filled with most varied sounds—piping, groaning, complaining squeaks mingled with sticky bubbling rales of all sizes. Small crackling rales exploded along the sternal border of the lung, and there were quick changes of breath sounds and rales during the inspiratory phase. Ortner well describes this remarkable cogwheel, varying, metamorphosed respiration. Goodhart speaks of a "glutinous bronchitis," of "sharp sticky rales of a quality quite peculiar to the disease." The sudden change of a sharp inspiratory murmur to an amphoric whiff with rales of a metallic ring is always suggestive of in-

fluenza; dilatation of the smaller bronchi, which may develop acutely (Leichtenstern) probably accounts for the auscultatory phenomena. The acute influenza bronchitis is frequently patchy, often confined to an upper lobe, and very apt rapidly to descend into the finest tubes. When diffuse, dyspnea is a marked feature. Graves long ago called attention to this extreme dyspnea; Sippy considers that marked dyspnea, paroxysms of cough and excessive sputum are symptoms that always should suggest influenza. The bronchitis may be dry or may be marked by profuse expectoration. Greenish or heavy purulent nummular sputum is suggestive, but not characteristic of influenza. Not infrequently the condition runs a subacute or chronic course. The peculiar rough cogwheel inspiration with rales of varying size persists over a circumscribed area of the lung, and awakens suspicion of a tubercular process. There is even more doubt if the condition be found without history of an acute onset—nothing but a most thorough examination of the patient and perhaps the tuberculin reaction will then decide.

Chronic recurrent bronchitis may be of influenzal origin. Some months ago a physician of 35 consulted me concerning a cough which had recurred over a period of 18 years. In 1890 in Germany he had a severe "cold"—this was the pandemic year. This left him with occasional cough, which grew worse in an attack called influenza in 1893 in Switzerland. The right apex was said to be involved and "congested." He went to Egypt, but the cough persisted; he lost some weight, and he returned to Switzerland, where the cough completely disappeared in summer to reappear each winter afterward. He came to California six years ago, and has been fairly well and active. His pulse is always rapid, and he finds it difficult to keep at weight and in proper working trim. There has been some cough each winter. At times there is a lot of sputum—a mouthful may come up suddenly when he talks or lies down. He feels that it comes from the right lung opposite the fourth rib in the parasternal line. On examination there was no emphysema, no dullness; the right lung border moved less well on inspiration in the scapular line; there was a decidedly prolonged, roughened expiration in the third right interspace in the parasternal line and a few dry and moist rales on inspiration; just inside the scapular spine on the right there was whispered bronchophony over a small area. A radiograph showed more marked drawing of the right bronchial tree; a tuberculin reaction was negative; the sputum was greenish, not offensive and showed an absolutely pure culture of influenza bacilli. There seems little doubt that this is an instance of chronic recurrent influenza with slight bronchiectasis.

Finkler [11] long ago noted the frequent addition of influenza to bronchitis of another kind. This year two cases of chronic emphysema with winter cough were seen, in which the history suggested that the influential bronchitis demonstrated in hospital was a late addition to the old picture.

In a young woman, asthma had developed after an acute bronchitis four years before. Beyond emphysema and dry bronchitis, the lungs were negative; there was no reaction to tuberculin and the sputum showed a few influenza bacilli, no eosinophiles and no crystals or spirals. An acute attack of purulent bronchitis with asthma led to the appearance of multitudes of influenza bacilli in the sputum.

Apart from the peculiarities noted above, signs peculiar to influenzal infection seem to me of little value. Occasionally one notes the tender points over the trigeminal branches and trachea upon which Ortner lays stress, and the red streak on the anterior faucial pillar described by Franke. [12] The flabby, creamy tongue is not at all constant.

2. Influenza Pneumonia. In January, a girl of 6 was brought for examination on account of malnutrition and indefinite abdominal attacks that had recurred at intervals of two or three months for nearly two years. These attacks were afebrile and marked by colicy pain and diarrhea for two or three days; they suggested larval appendicitis or the intestinal symptoms that are seen not infrequently in children with adenoids and large tonsils. The tonsils were very large and ragged, and they were removed together with a large adenoid some days later by Dr. Selfridge. Unfortunately no cultures were taken from the tonsils. Three days after the operation an acute bronchitis developed which, from the beginning, was marked by violent paroxysms of coughing. The intensity of the paroxysms led to examination of the sputum, which gave predominating influenza bacilli with a few pneumococci. Dyspnea and cyanosis were marked, the pulse rapid, and the bronchitis quickly became localized in two areas—one focus in the right upper lobe and the other at the left base. Consolidation was apparent at the end of ten days—small areas of bronchial respiration contrasting with neighboring foci of fine sticky rales. Nosebleed and vomiting frequently followed paroxyms of cough, and twice considerable blood was mixed with the purulent sputum, which the child brought up in unusual quantity. The heart became so dilated as to suggest pericardial effusion, the liver was large and tender, the spleen was not palpable, there was very slight temperature, and a leukocytosis of 12,000 with polynuclears 75%. The ophthalmo-tuberculin reaction was negative. The plugging of the bronchi to the left lower lobe suggested fluid at the base for some days, but as a rule a few sticky rales could be heard in the otherwise silent area. Gradually the chest cleared and convalescence was rapid. There are still moist rales to be heard below the right clavicle, but there is no consolidation and no cough. During the last months there has been no abdominal attack.

A man was seen two months since in hospital with signs that were first referred to tuberculosis of the right apex. There was history of some weeks' illness with fever, prostration and cough. There was infiltration above and below the right clavicle with varied signs on auscultation—bronchovesicular inspiration, bronchial expiration, dry and moist rales. There was no temperature, however, after the first

day in hospital; ophthalmo-tuberculin reaction was negative and the sputum showed only influenza bacilli. The lobe cleared rather quickly, and on discharge from the hospital two weeks later there were no signs. Some years ago a young woman was seen with infiltration of the right upper lobe involving the lung between the second and fourth ribs, not at the apex. Amphoric breathing and large metallic rales with crackling on inspiration, when breathing with the mouth open, gave evidence of cavity formation. There was a history of failing health and cough following a severe cold two years before. Fever had been occasionally noted; sputum was profuse, and there had been five or six attacks of slight hemoptysis. No elastic fibers or tubercle bacilli were found on repeated examinations; the tuberculin reaction was negative, and influenza bacilli were present in practically pure culture in the sputum.

As far back as 1837, Graves pointed out the unusual frequency of influenza pneumonia in the upper lobes, and emphasized the difficulty of differentiation from tuberculosis. The excellent articles of Lord show how closely the picture of chronic tuberculosis may be simulated. Leichtenstern was able to follow two cases over a period of two years to the autopsy table, and demonstrated the freedom from complication with tuberculosis. The cases with bronchiectasis and interstitial pneumonia are those particularly liable to lead to confusion, as there is cough, profuse expectoration, sweating, often temperature and wasting. There may, however, be simply delayed resolution without signs of breaking down. Ortner has seen resolution after six months' delay. If a lower lobe be affected and the bronchi plugged, as frequently occurs, repeated punctures may alone determine that we are dealing with delayed resolution and not with fluid.

Fraenkel[13] showed from numerous observations that shrinking of a portion of a lobe, an entire lobe or of the whole lung, was not an uncommon sequel of chronic influenzal pneumonia.

In March this year a woman of 33 was referred to me on account of attacks of pain in the gall-bladder region. These can be dismissed with the assurance that they were typical cholecystitis attacks. The condition of the left lung was far more interesting, though no complaint was made of any chest trouble aside from a cough of two weeks' standing. There was shrinking of the entire left chest with approximation of the ribs and a left convex scoliosis. The upper lobe above the scapular spine and second rib was intensely dull, the lower lobe below the angle of the scapula was absolutely flat. There was no respiration over the flat area at the base, and bronchial ins- and expiration was heard at the apex; over the scapula there was high pitched tympany, amphoric inspiration and large, consonating metallic rales. The signs indicated chronic infiltration, shrinking and bronchiectasis. A history was elicited of long continued cough and pneumonia nine years before, of severe cough two years before, when she was told of some "lung trouble," and of the present cough of three weeks' duration. There was no temperature apart from cholecystitis, but sweating was profuse. Ophthalmo-tuberculin reaction was negative. Leukocytes were 9,000 with 82% polynuclears. The sputum was very tenacious, slightly blood-tinged, and contained a pure culture of influenza bacilli. The chronic cirrhosis of the lung may well be of influenzal origin and there is undoubted bronchiectasis, probably secondary to the shrinking. It is interesting to speculate upon the nature of the cholecystitis, and operation will probably later decide.

3. Bronchiectasis with influenza. In July, 1905, a boy of 18 was referred to me by Dr. Henderson of Sacramento. He had been perfectly well until one year before, when his trouble started with an ordinary cold without fever. Cough was dry and occurred in severe paroxysms in the first two months, during which time he lost fifteen pounds. He then began to raise a large amount of purulent sputum, and in another month noticed that this became foul smelling. He was sent to Arizona without benefit, and continued to bring up large amounts of foul sputum. This often came with a gulp and sometimes rushed through his nose without great coughing efforts. The sputum in 1905 was thin, purulent, with extremely foul odor, separated into three layers on standing, and consisted almost wholly of degenerated pus cells. Elastic fibers were present, but no tubercle or other acid-fast bacilli. There were large numbers of bacteria, chiefly actively motile bacilli. Influenza bacilli were not found. There were signs of infiltration and small cavities in the right lower lobe and, as in other cases of my experience, these signs of bronchiectasis with peribronchial thickening were demonstrated far better by the ordinary methods of examination than by radiographs. The boy improved somewhat on forced feeding, myrtol and inhalations of creosote in the way suggested by Chaplin, but the sputum did not change essentially. In November, 1905, three ribs were resected by Dr. Henderson, and the right lung explored. There were very few adhesions over the lower lobe, no marked infiltration, although the lower lobe was more resistant. A discolored area near the base of the lung was punctured, but no cavity was entered. The sputum changed immediately after the operation, losing its putrid character, and the boy felt much better. There was free purulent discharge from the wound, but without odor. This improvement lasted two months, when cough and putrid expectoration returned—evidently the collapse of the lung caused the temporary betterment. In January, 1906, an irregular cavity in the lower lobe was entered through the former wound, and since then there has been little coughing but profuse discharge of foul pus from the wound. The patient gained weight and went back to work, but was sent me once again last December by Dr. Henderson to discuss the advisability of extensive rib resection. For a long time fluid introduced in the wound would be expectorated at once, but lately there has been little cough, and the communication seems closed. The patient has improved greatly in appearance, but finds the stench of the discharge almost unbearable;

and the wound must be dressed three times daily to be at all supportable. The signs at the right base are much more marked than before, and fairly typical signs of bronchiectasis in the left lower lobe have developed. Of great interest was the finding of many influenza bacilli in the smear from the lung sinus, although owing to the great numbers of associated bacteria, pure cultures were not isolated. From the history and clinical course, the most probably etiology of the bronchiectasis would seem to be influenza. Under treatment with X-ray and creosote inhalations and through the use of charcoal dressings, the discharge has diminished, and the odor gives little bother.

As noted above, Leichtenstern [14] described the acute development of bronchiectasis in influenza. This acute bronchiectasis may persist for weeks or months, and finally disappear or may remain stationary or may progress. The shrinking of chronic pneumonia may also lead to bronchiectasis, a mode of origin emphasized by Romberg [15]. The excellent articles of Lord and Boggs [16] give the most complete description of the clinical relations of influenza and bronchiectasis. One case of Boggs is particularly instructive as showing that influenza bacilli found in the sputum of patients with bronchiectasis over long periods of time may be decidedly virulent—a man of 60 with chronic cough and bronchiectasis showed influenza bacilli in the sputum, and later developed an empyema in which the bacilli were found in pure culture.

4. Modifications of Other Affections by Influenza. This is not the place to pass in review the multitudes of afflictions attributed to influenza. Gibson gives an excellent account of the influenza heart. Adams [17] has recently reviewed grippe meningitis, and Collins [18] writes of "Influenza in its Relation to Diseases of the Nervous System."

It is well to be cautious in referring indefinite nervous symptoms to influenza and to remember that tuberculosis and syphilis are more frequently to blame. It has not been my experience that influenza has anything to do with appendicitis, although some years ago a patient in hospital for influenza developed a mild appendix attack; Schultes [19] of the German writers, seems to have the most moderate views on this question. It has been my impression that, in grippe years, acute adenitis and glandular fever are more common; Tezenas du Montchel has written of general adenopathy in infants as a precursor of influenza. There is no doubt that influenza may influence most unfavorably a thyroid that before was not exactly normal. It does not seem to act much differently, however, from other acute pharyngeal or tonsillar infections in this respect. It has been my impression that a peculiar brachial neuritis, involving the axillary and musculospiral nerves chiefly, is more frequent when influenza is about, and that the same holds true for thrombophlebitis, spontaneous or after operation. The relations of influenza and typhoid have been much discussed. This year influenza bacilli were found in the sputum of a young man, whose chief symptoms were high temperature of sudden onset, cough, intense backache and headache. Temperature dropped after a few days, but headache persisted and marked optic neuritis of the left eye was demonstrated. Return of temperature after a week, a Widal reaction and bowel hemorrhages then plainly marked a complicating typhoid. Anders [20] published a paper some years ago upon "Typhoid Fever as a Complication and Sequel of Influenza," and Stollkund has written on the same subject.

A word may be added as to treatment. The patient with acute influenza belongs in bed, and it has seemed to me unwise to send subacute cases away to the country too early. Quinine is of some value in the acute stage. Large doses of creosote carbonate and intratracheal injections or instillations (after the manner of Mendel [22]) are of service in treatment of the bronchitis; 5% menthol or eucalyptol in oil, 10% iodoform in glycerine are the best preparations. For the chronic bronchitis, unresolved pneumonia or bronchiectasis X-ray should be tried. Creosote inhalations after the method advocated by Ewart and described by Chaplin [23] have in my experience given decided relief in bronchiectasis. In the diffuse bronchitis with failing heart in children, mustard packs as described by Huebner [24] should be given a thorough trial. It is my intention to treat the chronic carriers of bacilli, for example the patients mentioned above with bronchiectasis and chronic pneumonia, with autogenous vaccines.

REFERENCES.

1. Davis. Journal A. M. A. 1907, xlviii, 1563.
2. Jehle. Jahrbuch f. Kinderheilkunde 1906, lxiv, 716-723.
3. Wasserman. Ueber differentielle Diagnostik von entzuendlichen Lungenaffektionen. Deut. med. Woch. 1893, p. 47.
4. Pfeiffer. Die Aetiologie der Influenza. Zeitschr. f. Hygiene u. Infect. Krankh. xiii Bd. 1893.
5. Kretz. Influenza-Beobachtungen in Jahre 1897. Wiener klin. Woch. 1897, p. 40.
6. Kruse. Zur Aetiologie und Diagnose der Influenza. Deut. med. Woch. 1894, p. 24.
7. Jehle. Ueber die Rolle der Influenza als Mischinfektion. Zeit. f. Heilkinde 1901, Bd. xxii, Heft. 5.
8. Liebscher. Ueber Influenzabacillen befund bei Masern und Scharlach. Prager med. Woch. 1903, p. 85.
9. Auerbach. Zeit f. Hygiene und Infektionskrankheiten, 1904, xlvii, 259.
10. Lord. Boston Medical and Surgical Journal, May 11 and 18, 1905.
11. Finkler. Infektionen der Lunge durch Streptokokken und Influenzabacillen. Bonne 1895.
12. Franke. Chirurgische wichtige Komplikationen und Nachrankheiten der Influenza. Mittheil. aus den Grenzgebieten der Med. u. Chir. Bd. v, p. 263.
13. Fraenkel. Klinische und anatomische Mittheilingen ueber indurative Lungenentzuendung. Deut. med. Woch. 1895, p. 100.
14. Leichtenstern. Nothnagel's spec Pathologie und Therapie.
15. Romberg. Influenza in Mering's Lehrbuch d Medizin.
16. Boggs. The Influenza Bacillus in Bronchiectasis. Am. Jour. Med. Sciences 1905, v. 130, p. 902.
17. Adams. Archiv. f. Pediatrics 1907, xxiv, p. 721.
18. Collins. Influenza in its relation to Diseases of the Nervous System. Medical Record N. Y. 1907, lxxi, p. 337.
19. Schultes. Deut. med. Woch., Oct. 15, 1903.
20. Anders. Typhoid Fever as a Complication and a Sequel of Influenza. Phila. Reporter lxxiv, Medical News vol. 73.
21. Stollkund. Zeit f. innere Med. 1903, Aug. 15.
22. Mendel. Lancet 1905, ii, p. 133.
23. Chaplin. Brit. Med. Jour. 1895, i, p. 1371.
24. Huebner. Therapie der Gegenwart. 1905, No. 1.

NOTICE!

Remember to send your changes of address promptly to 931 Butler Building, San Francisco.

PLAGUE.

Being a translation of the Fourth Chapter of "La Pathologie Exotique," by Professor A. Le Dantec of the Faculty of Medicine, Bordeaux.

Translated for the State Journal by Dr. W. C. RUCKER, P. A. Surgeon, U. S. P. H. and M. H. S.

(Concluded from page 283)

The carbuncles (Les charbons) are thus named because of their resemblance to a malignant pustule. The primary carbuncles begin with a red spot resembling the bite of a flea. The center of the spot raises itself as a vesicle and becomes filled with a reddish fluid which distends and enlarges it more or less. After the rupture of the primary vesicle comes a central placque or sphacelus, about which forms new daughter vesicles. In fact, outside and about the daughter vesicles the skin presents a red color: sphacelating point, daughter or secondary vesicles and inflammatory zone spread themselves upon the surface.

The secondary carbuncles are more spreading than the primary carbuncles. They have been known to denude an entire member. Clot-Bey has divided the carbuncles into three degrees:

First degree. Superficial lesion involving on the epidermis.

Second degree, or anthrax. Lesion involving the skin and subcutaneous cellular tissue.

Third degree. Gangrene of the skin, muscles and bone.

The carbuncles appear usually on the trunk and limbs, but one may observe them in all the regions of the body, the scrotum, the labia, the nose, the scalp, etc., with the exception of the palms of the hands and the soles of the feet. Their number may vary from one to twelve. The carbuncles leave behind them indelible cicatrices.

The petechiae, when they appear in plague constitute a sign of the greatest gravity and generally announce a fatal termination. Sometimes punctiform, the petechiae are about the diameter of a lentil. At other times, however, they may be so large as to merit the name ecchymoses. The petechiae may appear upon the neck, the chest or the limbs, but occasionally they are so numerous that the skin is discolored as if it had been beaten, from which the name, black plague is given this form. (Mertens.)

As the petechiae are, on the whole, an infiltration of blood into the skin, they are generally accompanied with grave hemorrhages in other ways, epistaxis, hematemesis, etc. This variety of plague is also called hemorrhagic plague.

Sphacelus of the extremities is a rare complication of plague. Its mechanism is the same as in other grave pyrexias.

One also observes, as in other infectious diseases, secondary foci of suppuration, furuncles, boils, suppurating arthritis, etc.

The kidneys are also attacked by plague and produce albumen in the urine.

Various psychical troubles may manifest themselves during the course or during the convalescence of plague. In the beginning of the disease one observes a considerable hebetude, the patient understands with difficulty what is said to him. He responds badly, sometimes harshly or incoherently, like a drunken man. Later the stupor is augmented with delirium and hallucinations. Finally the patient sinks into coma and dies without having recovered his intelligence for a single instant before the fatal termination. One observes sometimes psychoses during the convalescence from plague. These are called post-plague amnesias and aphasias. True dementia is very rare. Premature abortion or labor is the rule in pregnant women attacked by plague.

Observation II. (Simond). Chinese, age 46 years. The subject, of large and strong stature, lives in a quarter outside the city. He has been sick three days. In the anterior cervical region an adenitis has developed to the point of completely effacing the depression of the neck. The enlarged glands form a solitary mass of very hard, almost woody consistence, painful on pressure, over which the skin is tender, red and congested. The face is flushed, there is intense dyspnea and noisy respiration has been produced by the compression of the trachea by the adenitis. The entire buccal mucous membrane is inflamed, red and bloody. The tongue is covered by a brownish coating and is cracked and swollen.

The axillary temperature is 40°. The pulse is small and 132 per minute. The skin is parched and hot, and does not present any exanthem except that it is red about the buboes. The spleen and liver are apparently normal. The abdomen is slightly swollen. There has been constipation for four days and the urine is scanty. The patient has been in a very weak state for two days. He has presented delirium but at the moment when I examined him he knew what was said to him and responded by signs. The condition of the mouth and the difficulty of respiration did not permit him to speak intelligently. Death supervened twenty-four hours later.

Observation III. (Simond.) Annamite; 24 years old. The patient complains of continuous fever, lassitude and cephalalgia since the 9th of April. He has had some vomiting and was confined to his bed on the 11th. I was called to see him on the night of the 13th. At that time the patient was lying in a state of marked prostration with an intense fever. The axillary temperature was 40.5°. The pulse was 120. The tongue was coated and moist, and he spoke with difficulty. On the right thigh below the fold of the groin is a large tumor formed by two swollen very painful glands. The skin covering it is tender and slightly congested. The spleen and the liver are of normal dimensions but indolent. There has been constipation for several days. The urine is normal in quantity and contains a small amount of albumen. The weakness has been very great for two days, the patient falling upon attempting to go from his bed to a chair and being unable to arise.

During the four days which followed conditions remained unchanged: the temperature oscillated between 39.5° and 40.5°. There was delirium during the night and part of the day. The treatment followed consisted of quinine with cinnamon and ether and purgative injections. On the 18th defervescence began, the pulse fell to 60 and the temperature to 38.5°. The primary swelling diminished in size but the entire lymphatic chain of the groin was swollen and indurated. The improvement continued during the following days. However, one of the two glands first invaded became softened and suppurated. I saw the patient again eight days later completely recovered.

(c) Ambulatory, or attenuated form. This form is characterized by painless buboes accompanied by little or no fever, terminating sometimes in resolution or suppuration. The patient is able to walk about during his illness. Generally one encounters grave forms of plague near these attenuated forms. There are recorded veritable epidemics of attenuated form of plague, for example, the epidemic of benign plague which took place, according to Rossi, in the third regiment of the line at Zagazig (Lower Egypt) in 1842. This is the endemic of Bagdad from 1856 to 1861. Such are the epidemics of attenuated plague which preceded the epidemics of grave plague in India in 1873 (Irak-Arabi), in Astrakan in 1877-1878. At LaReunion Thiroux demonstrated that many of the primary buboes were simply of attenuated plague.

2. Pulmonary Plague or Primary Plague Pneumonia.

Certain epidemics of plague are characterized by great frequency of the pulmonary forms and for a

long time there was great hesitancy in calling these epidemics of true plague. This was the case of the epidemic of Pali. The pulmonary form of plague was frequent in the epidemics of Korassan and Kurdistan. At other times epidemics of plague began as the pulmonary form as at Vetlianka. These were thought in the beginning to be cases of croupous pneumonia. The pulmonary form of plague is characterized by great dyspnoea, blood streaked sputum and by the clinical signs of pulmonary hepatization. It is thus a pest pneumonia. The mortality is extremely high. The disease described by Renny under the name of Mahamurrie of Guhrival was nothing else but an epidemic of the pulmonary form.

Here is the observation of Mauser, who died of pneumonic plague in India:

Mauser was well until the second of January, when, in the forenoon he was seized with a chill and fever. During the remainder of the day he suffered from a violent headache and nausea with vomiting, generalized pain and cough. The temperature mounted to 39.7, the pulse to 116, the tongue remained clean and moist, the skin normal. That night he was very ill. The third of January he was worse, temperature 40°, pulse 110, respiration 23. In the afternoon he complained of pain in the lower part of the left axilla without engorged or sensitive glands.

The night of the third and fourth he was exceedingly ill, temperature 40.3°, pulse 114, respiration 25. The tongue was moist, with slight coating posteriorly. The patient began to cough and to raise a sero-mucous sputum, streaked red by blood. The axillary pain persisted and ausculation at this level disclosed fine crepitant rales which resembled those found at the beginning of a pneumonia. These rales were deeply seated below the left clavicle. The remainder of the lung and the other organs seemed to be normal.

Still the symptomology is not that of an ordinary pneumonia. There is not the respiratory acceleration, the dyspnea; the sputum is not adherent; it is more watery, serous rather than mucous; it is stained slightly red. There is more depression than would be expected at such an early date from so small a focus. For this reason Childe made microscopical examination of the sputum and found large numbers of bacilli having the aspect of pest bacilli. The culture developed almost pure colonies of plague.

The 4th and 5th the patient became worse and worse. The expectoration was abundant, the temperature 40°, respiration increased from 35 to 45 and the pulse from 120 to 135. The tongue became dry. The patient died on the 6th in the fifth day of the disease. The nurse who cared for this patient died of the same form in less than four days. (Childe & Netter.)

The cases of plague which are produced in laboratory epidemics are also cases of pneumonic plague. Barisch, the laboratory boy of Vienna, had pneumonic plague. He was attended by Dr. Muller, who also had the pneumonic form and died in less than three days.

The manufactories of rags also give birth to the pneumonic form of plague, as in the recent epidemic of St. Barnaby near Marseilles.

We would especially call the attention of physicians to the importance of the bacteriological examination of the sputum, which alone will clear up all doubt in these cases.

3. **Gastro-Intestinal Plague.** The existence of gastro-intestinal plague is admitted by only a small number of authors. Hojel reported five observations. Wilm recovered the pest bacillus from the fecal matter of plague patients and has seen one case with a mesenteric bubo.

Gastro-intestinal plague is characterized by evacuations, at first bilious, later hemorrhagic. The patient presents melena and true hematemesis exactly like black vomit. The epidemic of Recht in 1877 was remarkable because of the great number of gastro-intestinal cases.

One thus sees that it is necessary to know the existence of the clinical forms of plague in order not to commit a fatal blunder, especially at the beginning of an epidemic, when prophylactic measures may be taken to arrest the scourge.

Pathological Anatomy.

The anatomical lesions which one encounters at the autopsy of subjects dead of plague vary according to whether the form be bubonic, septicemic or pneumonic.

1. Bubonic form. The pathognomonic lesion of plague is the bubo, which may be external, bubo of the groin, the neck or axilla; or internal, bronchial glands, or glands of the pelvis. The pest bubo is an adenitis accompanied by hemorrhage and bloody exudation, sometimes by suppuration. The cellular tissue which surrounds the gland is infiltrated with a sanguinolent serum. Sometimes on opening the gland, one finds it the color of lees of wine, just before suppuration takes place. The bacilli of plague first invade the crypt of the gland and finally the folliculi of the same. In the period of suppuration purulent tracts are formed which connect the internal glands with the external glands, glands of the axilla with the bronchial glands, glands of the groin with glands of the pelvis.

2. Septicemic form. When death takes place very rapidly one finds the lesions common to all of the septicemias.

The body is usually covered with petechiae and ecchymoses. In certain cases they are so numerous as to give the skin a blackish appearance, which has caused the name "black pest" to be attached to this form. One may observe here as in cholera spontaneous post-mortem movements, with a coincident rise of temperature. The ecchymotic placques which are called internal pustules are found on all the serous surfaces, pleura, pericardium and peritoneum. The heart contains fluid blood slightly coagulable. The lungs are deeply congested, sometimes accompanied with pneumonia, broncho-pneumonia, infarcts and abscesses of the same. The spleen is considerably increased in volume. The liver is hyperemic. The mucous membrane of the digestive tube presents here and there ecchymotic spots and ulcerations, principally in the neighborhood of the ileo-cecal valve. The small intestine sometimes contains extravasated blood. The uterus and the bladder present sub-mucous ecchymoses. The brain is deeply congested and on incision presents more or less abundant punctate hemorrhages.

In the place of the hemorrhagic septicemia which we have just described, one sometimes finds, at autopsy, the lesions of a septicemic pyemia, with metastatic foci in all the viscera, lungs, spleen and kidneys. The purulent foci are filled with the bacilli.

3. Pneumonic form. The third type is the primary plague pneumonia with rapid fatality; the glands have not had time to become altered. This acts as a confluent lobular broncho-pneumonia, with involvement of the pleura. The tonsils are often red and enlarged.

Diagnosis.

The diagnosis between plague and the other typhoid diseases, typhoid fever and typhus, does not offer any difficulty for these maladies have one symptom in common, that is, stupor. The characteristic bubo of the common form of plague is a substantial basis for the diagnosis. It is not often in the septicemic, pulmonary and gastro-intestinal forms that the diagnosis can be made without hesitation in the beginning. It is useful in these cases to search for the pest bacilli in the blood and excreta.

Bareskoff has described under the name of Si-

berian plague (Sibirskajajasna) an infectious disease caused by the bites of insects and characterized by the presence of carbuncles and pustules on the surface of the skin. It attacks animals severely, men less severely.

Prognosis.

The primary pneumonic form and the septicemic or typhoid form are almost always fatal. The grave bubonic form is announced by a succession of symptoms very disquieting from the first, temperature as high as 40°, repeated bilious vomiting, facies drawn, profound stupor, coma, violent delirium, purpura, considerable oedema in the region of the affected gland, etc.

The benign bubonic form is marked on the contrary by an attenuation of the symptoms both local and general, but in the presence of a case of this class one should reserve the prognosis, for death has been observed to follow a plague broncho-pneumonia in patients who were apparently out of danger. Plague is almost always fatal in children and in the aged.

Mortality.

We have previously established that all races present more or less the same receptivity for plague, but we will see now that once the disease has been contracted, all do not offer the same resistance to the virus. According to Simond, the resistance is manifestly greatest in Europeans. Thus, in India, their mortality was between 38% to 39%, while that of the Mohemmedans was 70% and that of the natives was always above 80%, reaching over 90% in the lower castes. The mortality of the hybrids was between that of the Europeans and the Musselmans. Good health and good food increase the individual resistance of all the human races.

Prophylaxis.

The prophylaxis of plague, like the prophylaxis against cholera, requires three successive lines of defense. 1. International prophylaxis, which comprehends the measures adopted by the league of Europe against the invasion of pestilential diseases. 2. National prophylaxis, which comprehends all the measures taken by the French government against the importation of plague into its proper territory. 3. Finally, interior prophylaxis or public hygiene, charged with combating the plague once it has disembarked and reached the interior territory. This triple line of defence may be compared to the triple line of defences about a besieged city; first, the exterior line of forts represents the international prophylaxis; second, the ramparts represent national prophylaxis; and third, the barricades of the streets represent the measures taken for the public hygiene. It is the latter which we will study in this chapter, the two former relating to the international and national sanitary police, which is considered at the end of this volume.

The prophylaxis against plague on land comprehends:

1. Measures to be taken to prevent plague.
2. Measures to be taken in the presence of a case of plague.
3. Measures to be taken in the presence of an epidemic of plague.

Measures to be Taken to Prevent Plague. War Against the Rats. The rat being the specific vehicle, as one might say, the commercial traveler of plague, if one would wipe out that animal, one would cut off at the same time all chance of the propagation of plague throughout the world. From this is born the idea of declaring war of extermination against rats. It is the great question of to-day.

In the first place, from a historical point of view, it is well known that the rat is not an autochthonous animal; it has come from Asia by two successive emigrations. The first emigration was that of the black rat, having a tail longer than the body, which dates somewhat prior to the fall of the Roman Empire. The second emigration was that of the brown rat, having a short tail and a large body, which invaded all Europe at the commencement of the 18th century. The brown rat, being more hardy, hunted the black rat almost to complete extermination, until it was obliged to seek refuge in the fields. Thus the brown rat actually reigns as master in the cities, where he inhabits the drains, the cellars, the sewers, etc. The havoc caused by rats is estimated at many millions per year.

The idea of declaring a war of extermination against these rodents began in Denmark, where Zuschlag has been a veritable promoter and apostle of this new crusade. Zuschlag associated others with him as a committee and was charged with the collection of the necessary funds for this campaign in a new field. The committee offered a bounty of fourteen centimes for each rat tail which was brought to them. In a few months one hundred thousand rats were exterminated. In 1901 the committee organized at Copenhagen an international exposition of the apparatus for the destruction and capture of rats. The anti-rodent movement spread to the rest of Europe, America and Australia. In France, Granjux has been the initiator of this movement. He reproduced in "Le Caducec" the designs of ingenious apparatus for the capture of rats and has published in that journal two articles on the question in hand. All the procedures employed for the destruction of rats reduce themselves to five systems:

(a) The system of poisonous preparations.
(b) The system of virus.
(c) The system of traps.
(d) The system of bounties.
(e) The system of gaseous asphyxiants.

(a) Toxic preparations. The various pastes called "death to the rat" have for their base arsenious acid, phosphorus or strychnine. All these preparations are inconvenient in that they kill the animal on the premises, where the cadavers produce an insupportable odor during the entire time of their putrefaction. The system of viruses presents the same inconvenience.

(b) Virus. In 1893, during an epidemic which appeared spontaneously in the field mice and squirrels in Seine-et-Marne, Danysz isolated a cocco-bacillus from the cadavers of these dead animals. As this cocco-bacillus, virulent for this species of vermin, was absolutely non-toxic for man and domestic animals, Danysz conceived the idea of using it for the systematic destruction of rats. The experiments made recently at Aigre, Oradour and Mons, on a surface of 1200 hectares, 95% of the rats were killed with the experimental epizootic. Following these conclusive experiments Parliament, by the law of March 24, 1904, placed at the credit of the Pasteur Institute 295,000 francs for the manufacture and shipment of sufficient quantity of Danysz virus to treat 150,000 hectares. This war of extermination was made necessary by the progressive invasion of the fields by field mice in Charentes, Calvados and Marne. The following is the procedure for the distribution of the virus: Little cubes of bread are soaked in the bouillon culture of the cocco-bacillus and placed in the opening of each rat burrow. In about 8 to 10 days a fatal epidemic appears among the rodents.

(c) Trapping rats. The system of capture of the rats in cages is to be recommended because it permits the examination of the bodies of the rats. This is the system employed by rat catchers.

(d) Bounties. The system of bounties has proven more efficacious because it includes all the different systems employed by professional rat-catchers for the capture of these animals. It has been adopted by the English in India and Hongkong, and also by us at Tonquin. At Hanoi the bounty was ten cents

per rat at the beginning but, on account of the fraud perpetrated by the natives of importing the rats from the frontiers of China, it was necessary to reduce the bounty to one cent. In the space of one month 640,000 rats were exterminated.

(e) Gaseous asphyxiants. The system of gaseous asphyxiants, carbon monoxide, carbonic acid and sulphurous acid are all to be employed in the destruction of rats on board ship. We will speak of it in the addendum under the maritime sanitary police.

2. Measures to be Taken in the Presence of a Case of Plague. When a suspicious case of plague is discovered, the physician is required to advise the local authorities and in co-operation with them to take a series of measures for the isolation of the patient and the destruction of the contagion. Here is the enumeration of these measures:

(a) Obligatory declaration. All cases suspicious of plague should be immediately declared, first to the mayor, second, to the sheriff or deputy sheriff.

(b) Telegram to the director of the Laboratory of the province. The physician should advise telegraphically the director of the bacteriological laboratory of the maritime province to which he belongs. Here are the cities in which there is an officially named director: first province, Lille; second, Rouen; third, Brest; fourth, Nantes; fifth, Bordeaux; sixth, Montpellier, Marseilles, Algiers, Oran, Constantino, Tunis.

(c) Isolation of the patient. The patient should be immediately isolated in another place in order to allow the disinfection of that which he has contaminated. If there exists an isolation hospital and ambulance, the patient should be immediately taken there and the vehicle which served for this purpose immediately washed with an antiseptic solution.

(d) Precautions to be taken in the sick room. Before the entry of the patient, the room should be freed of the curtains, the hangings, the carpets, and all the furniture which is not indispensable. The bed should be taken apart and washed with an antiseptic solution and placed in the middle of the room. The mattress, the sheets and bed-clothing should be placed in an oven to kill all living parasites. The floor should be washed with an antiseptic fluid, especially in the cracks and angles so as to kill the fleas and parasites. It should be washed with an antiseptic every day.

The patient should be kept in a state of constant cleanliness. The person nursing him should be subject to the following rules:

To be immunized by an injection of 10cc of Yersin's serum.

Not to take any food or drink in the patient's room.

Never to eat without having washed the face and hands with soap and a disinfectant solution, or without having rinsed the mouth with a hydrochloric acid lemonade, 4 gm. to the 1000.

The room should be thoroughly aired several times daily.

The soiled linen should be immediately plunged in a vessel containing an antiseptic fluid.

(e) Disinfection of the infected room. The entire bedding, mattress, sheets and blankets, all the body linen and clothing of the patient, and the curtains of the room should be heated in an oven at 120° C. All articles which will not permit of fumigation with sulphur should be fumigated with formaldehyde or moist steam at the temperature of 70°.

For disinfecting the apartment, sulphur dioxide is the best means after having sealed all the cracks with strips of paper. Thirty to forty grams of sulphur to the cubic meter are necessary.

If sulphuration is not possible, the entire surface of the room, ceiling, walls and floor should be washed with a solution of corrosive sublimate, sublimate 1 gm., salt 2 gm., water, 1000.

It is important that the persons charged with the disinfection should wear special garments which are to be disinfected at the end of these operations.

3. Measures to be Taken in Case of an Epidemic of Plague. Epidemics of plague are no longer known in Europe, because the rigorous isolation of the first case, joined with the disinfection of the locality, arrest the disease immediately. But this is not the same in colonies where the European authorities are not warned until the epidemic has begun. In such a case it is necessary to take the following radical measures:

(a) Destruction by fire of all the contamined villages.

(b) Disinfection of all the clothing left at the disposition of the inhabitants.

(c) Transport of the infected population to another village especially constructed to prevent communication with the neighboring towns. Injection of prophylactic serum.

(d) Construction of an isolation compound for all plague patients.

(e) Destruction of the rats and mice in all the villages of the country.

Quarantine should not be raised until after the close of the epidemic. The patients should not be liberated until after another minute disinfection of their bodies (bath) and clothing (steam under pressure).

Treatment.

The treatment of plague includes preventive and curative treatment.

1. Preventive treatment. The preventive treatment is applied in the hope of protecting from plague persons who sojourn in plague countries. Two products have been used for this, Haffkine's lymph and Yersin's serum.

(a) Haffkine's lymph. We have seen in the chapter on bacteriology that Calmette, after experiments made upon animals gave a favorable opinion on the employment of Haffkine's preventive lymph. However, other experimenters working on the same animals have arrived at conclusions diametrically opposite. (Simond, Vassal.) This does not necessarily judge the method as applied to man, for the statistics published in India, where more than 400,000 vaccinations have been made, are very favorable. Also the English government has favored all taking the Haffkine's vaccination, by according to the vaccinated natives many advantages, such as freedom from quarantine, authorization to be treated at home, etc.

Haffkine's method is open to the following objections:

1. The method is not surely efficacious, for the vaccinated take plague, like the non-vaccinated, though in much smaller proportions, 1 vaccinated to 4 non-vaccinated.

2. Immunization is not acquired till the seventh day, a grave objection in time of epidemic.

3. The injection is very painful. It produces immediately a very active local reaction. The neighboring glands become swollen and the temperature sometimes reaches 39° to 40°. The inoculated patient is obliged to stay in bed for several days. In the presence of these results it is better to have recourse to serum vaccinations.

(b) Yersin's serum. This method has weighty advantages over the method of Haffkine.

1. The immunity acquired is immediate, an important thing in checking a beginning epidemic.

2. The injection is not painful, which makes it accepted more easily than that of Haffkine.

3. The immunity is certain during a minimum of ten days, as has been proved by all experiments made upon animals. The dose to be inoculated is 10cc. for an adult.

2. Curative treatment. The curative treatment

comprehends both the medical and specific treatment by serum.

The medical treatment is purely symptomatic. It consists in administering tonics and diffusable stimulants and cold baths whenever the axillary temperature is very high. If one does not have antipest serum, we advise the use of intra-venous injections of collargol, 2½cc. of a 1% solution.

The specific treatment consists in antipest serum therapy. Two antipest serums have been tried in the treatment of plague, the serum of Lustig and the serum of Yersin.

(a) Antitoxic serum of Lustig. We have seen in the chapter on bacteriology the way of making this serum. Galeotti and Polverini have tested its curative virtues for man in the epidemic of Bombay of 1898. The injection was made beneath the skin of a dose of 10 to 20cc. repeated twice the first day and continued on the following days. The total quantity of serum injected into an adult varied from 60 to 80 cc. The mortality in treated individuals in three series covering fifty-nine cases was one per cent.

The monograph of the two Italian authors has been thus summed up by Netter:

The treatment has greatest chance of success when it is commenced early in the disease. The authors have been able to cure three cases of septicemia because they began on the first day. They were never successful in curing the pneumonic form which they consider as absolutely fatal.

(b) Antitoxic and antimicrobic serum of Yersin. Here is an experiment made by Simond in India which proves the efficacy of the serum from a therapeutic viewpoint in the animal most closely approaching man:

"We diluted with 4 cc of sterile bouillon two drops of blood taken from the heart of a rat dead of spontaneous plague, the blood containing the bacilli in pure culture and in great abundance. Immediately afterward they injected this liquid into two large apes of the same species, size and weight. Each received an injection of 2 cc beneath the skin of the thigh. After about twelve hours the two animals presented large right inguinal buboes, intense fever, stupor, difficulty in walking and great feebleness. The symptoms were identical in all respects in both animals. Twelve hours later, that is to say, twenty-four hours after the inoculation, we injected 20 cc of serum into one taken at random. This one changed notably in his condition in the few hours which followed, and the day afterward he took a little food and seemed less depressed while the control was much worse. The latter died sixty-seven hours after inoculation. On the contrary, the ape treated with serum recovered. The fever of this one fell on the fourth day and suppuration of the bubo took place from the sixth to the tenth day."

At the beginning of the use of serum therapy in the treatment of human plague the injection was always made beneath the skin. Calmette and Salimbeni, at Oporto, used for the first time intravenous injections in the treatment of plague pneumonia, which prior to this time had always been considered fatal. Thanks to this energetic method they obtained three cures out of three cases treated. After this, the treatment by intravenous injections was employed in the bubonic form of plague. Vassal, at La Reunion, and Noc, in New Caledonia, made intravenous injections of 40 cc to 60 cc twice daily. The effect of these large doses was the checking of the disease. Vassal inoculated 20 cc in the veins and 40 cc or less beneath the skin the first day. He renewed this double injection 12 hours later if the case was grave. The total quantity of serum used in treating a single patient was as high in one case as 440 cc. In using intravenous injections, care should be taken to avoid the introduction of air in the veins. Here is the method of operation:

One chooses a syringe which will empty itself completely and a flask of clear serum. If the serum is clouded it should not be used until after filtration through antiseptic cotton. The serum should be heated to about 37°, the syringe filled and freed from any bubbles of air which it may contain. After having sterilized the selected region (fold of the groin, back of the hand or malleoar region) one applies at the base of the member a constricting bandage to cause the vein which is to be injected to fill with blood. One lifts the skin with the left hand and with the right forces the point of the needle of the syringe into the vein. The blood flowing out drop by drop shows that one is well within the vessel. One then fits the beak of the charged syringe upon the free end of the needle and makes the injection slowly. In four or five minutes one may release the bandage slightly. To be sure that one has not injected a bubble of air one does not empty the syringe entirely. The needle is removed and a little collodion applied.

The hypodermic injection is made in the right or left flank. One has no advantage over the other except as it be near the glands.

The results obtained are very variable. This variability is dependent on many factors, the antitoxic power of the serum, racial peculiarities and early or late intervention. Yersin, in his first trials in China, had magnificent results in antipest serum therapy. Twenty-one cures out of twenty-two cases. Later, in India, the statistics were less favorable, the mortality being 49%. At La Reunion, Vassal obtained the following results:

Mortality in 38 cases treated with serum, 8%.

Mortality in 80 cases not treated with serum, 30%.

To apply the serum therapy in a methodical way the blood should be examined once or twice daily for plague bacilli and to ascertain the leukocyte reaction. Noc, in New Caledonia, remarked that after each injection of serum there was a diminution of bacilli in the blood and an increase in the polynuclear leukocytes.

All the authors who have used antipest serum therapy insist on the importance of early intervention. The following table was drawn up by Yersin after his trial of serum therapy in Bombay in 1897:

Patients inoculated first day, mortality....12%
Patients inoculated second day, mortality..35%
Patients inoculated third day, mortality....50%
Patients inoculated fourth day, mortality..66%

The rule of antipest serum therapy may be expressed in a few words: act quickly and energetically. Quickly, that is to say, in the shortest possible time after the beginning of the disease. Energetically, that is to say, by intravenous and subcutaneous injections.

It is well to warn the patient that the serum sometimes produces skin eruptions, which are harmless. This precaution should be taken prior to the injection of antipest serum into healthy patients. During the quarantine of the "Senegal," such results of serum vaccination produced considerable anxiety among the passengers who had not been previously warned of the possibility of a skin eruption.

A GLANCE OVER THE DEVELOPMENT OF THE TECHNIC OF MODERN GYNECOLOGICAL OPERATIONS.*

PROF. R. MARTIN, Berlin, Germany.

While glancing over the development of gynecology I became especially interested in finding out the various steps gynecological treatment has taken. Forty years ago the work of the gynecologist was

*Author's abstract of paper read before the American Genecological Society in Philadelphia.

limited to medical and orthopedic applications to the vulva, vagina and collum uteri. One was timid about entering the uterine cavity, but after Simpson and E. Martin had made the decision of the narrowed os uteri and after the employment of the ecraseur of Chassaignac a step forward was noted. About this time too Atlee, Peaslee, Spencer Wells, Baker, Brown, Koeberle and Keith had met with good results from laparotomy for abdominal neoplasms. Marion Sims, Gustav Simon and Hegar were among the first to lay bare the vaginal vault and inaugurate the plastic work on the collum and vagina. Emmet's trachelorrhaphy and the successful fistula operations of Simon and Bozeman were triumphs of this time. Intrauterine treatment was now improved by the use of sponge tents in dilating the cervix and opening up the uterine cavity to the curette and medical applications.

Next abdominal surgery advanced. We operated not only upon neoplasmata, but upon inflammatory tissue. Lawson, Tait, Hegar and I proved at that time the possibility of satisfactory results from abdominal section in cases of oophoritis and salpingitis. At the time we also learned that many of these supposed inflammatory masses were due to ectopic location of a fertilized ovum. Meanwhile W. A. Freund had by a combination of abdominal and vaginal methods operated upon cancer of the uterus. The method being enlarged so as to include pelvic tissues and retroperitoneal glands is to-day the typical carcinoma operation. Freund's advance gave impetus to extirpate the carcinomatous uterus by the vaginal route. Czerny, Billroth and Schroeder led the way. While this has been more or less dropped, a step was taken, for we learned to separate the uterus vaginally in case of non-malignant disease, to operate on the adnexa, and even to preserve them after removal of diseased parts, this being the beginning of conservative operations in gynecology.

About this time, too, another step was taken in treating deviations of the uterus through the vaginal route, and the ideas of Saenger and Olshausen have opened up a wide field of operative work for utero-fixation. Later the Alexander-Adams operation began to supersede ventral fixation, and Duehrssen showed at the beginning of the last decade that there was a safe vaginal route of exploring the true pelvis and its organs. It seemed for a time that abdominal operations would be limited to large tumors, but soon a reaction set in, at least so far as extrauterine pregnancy and inflamed adnexa were concerned. To-day enthusiasm for vaginal operation has subsided.

The advances in gynecology were greatly helped by the increased knowledge of pathological anatomy and the ability to differentiate the processes before a tumor distended the abdomen, or the entire pelvis was blocked by diseased organs. Following Karl Ruge we now diagnose disease from microscopical examinations, biochemical tests, and culture and inoculations, but we dare not forget that there is yet here much field for exploration. Of course, the replacing of asepsis for antisepsis has been of great help in this advance, and we all honor Holmes, Seimmelweiss, Pasteur, Koch and Lister.

To-day sufficient up-to-date material is at hand to study not only primary results of operations, but also whether the results of such operations be permanent or not. After such critical examination we must admit that even though the vaginal method so far as localized processes go leaves little to be desired, laparotomy claims preference.

The mortality from opening the peritoneal cavity has been lessened from the vigorous stand against septic infection. It is being universally attempted to shorten operative procedures and expose the peritoneum as little as possible, and to lessen the deleterious effects of narcosis; but we yet have to deal with the stretching of the scar and ventral hernia. Primary union and not stretching the wound has much reduced this, yet where drainage is called for this sometimes can't be omitted. Another danger even after healing is the adhesions of the intestines and omentum to the abdominal incision and tumor stump. No means is at present at hand to prevent them for neither the careful handling of the peritoneum, nor the attempts to prevent this process by oily substances or salt solution, nor the early action of motus peristalticus counteracts these complications to any satisfactory extent. They will be a constant danger in laparotomy at all events, more so than in vaginal operation. Of course, the pelvic organs are not insured against similar adhesions, but my own extensive experience teaches me they are hereby very much less frequent. Certainly the vaginal operation requires a special training, but the advantages gained are a sufficient return for the pains, and even more when we consider that patients get upon their feet again quite as soon as after a normal birth, earlier than after the most simple laparotomy.

The vaginal operation can only be considered for a limited field in gynecological affections, but no one is entitled to say that tumors of the uterus or ovaries should only be approached by this method so long as they are in the true pelvis. I do not know of such a limitation. The boundary does not depend on the true pelvis, but upon whether the tumor is freely movable. Even small tumors firmly fixed should not be attacked by the vaginal route. On the other hand, larger tumors can be attacked, if movable, and by morcellation or puncture have their size reduced. Sometimes adhesions can be separated, but usually I consider them as a counter-indication.

The treatment of acute inflammatory affections of the tubes and ovaries has also changed during the last few years. We now recognize that gonorrheal infection starts in an acute attack. Under proper treatment healing takes place and may be so complete that full functional activity is regained, and dried pus, thickenings and calloseties indicate beyond question that serious processes do at least become quiescent. These observations compel us most earnestly to consider whether it is right to remove these inflamed organs as long as there is no immediate danger to life. In fact patients do recover without operation in spite of gonorrhea, tuberculosis, puerperal fever and septic infections.

ALAMEDA COUNTY.

The regular meeting for July was held on the 21st and called to order by the president, who introduced Dr. Charles G. Levison, of San Francisco.

Dr. Levison, before operating, reviewed the subject of local analgesia. He stated "that while Schleich deserved all credit for popularizing infiltration anesthesia, it must not be forgotten, however, that Reclus is the originator of this method. Schleich's position in local analgesia is due to the fact that he first advocated the use of the very weak solution of cocain. It was in 1886 that Reclus first advocated infiltrating the skin, and at this time and for years subsequently, he employed cocain in a one-half per cent solution without any mishap, using as much as 20 centigrams at one sitting. He claimed that the danger in the use of cocain hypodermically lay in the employment of strong solutions, not in the amount of the drug used.

Reclus claims that a few drops of a two per cent solution of cocain are much more dangerous than the employment of a much larger quantity of a one-half per cent solution. Reclus also insists that the patients are to be kept in a recumbent posture for one

hour following the operation and he believes that many cases of syncope following the use of cocain are due to the fact that the patient is allowed to leave the table as soon as the operation has been concluded. By observing this precaution and by the employment of a one-half per cent solution of cocain with a maximum dose of 20 centigrams Reclus has performed over ten thousand operations without an accident. He now uses a one-half per cent solution of stovain instead. Kocher employs a one per cent solution of adrenalin-novocain in his goitre operations.

Dr. Levison's observations in the Kocher Clinic were, that the phlegmatic German Swiss was the best subject for local analgesia and the French Swiss was the poorest, while the Italian Swiss was to be compared to the American as far as susceptibility to local anesthesia was concerned. Kocher generally waits fifteen minutes after the injection is made before commencing the operation. Dr. Levison stated that while he had used spinal anesthesia in about seven hundred cases, he has now discarded the same, as he believes that ether or gas narcosis carefully produced is not associated with as much danger as is the case with the lumbar anesthesia.

In describing the method of local analgesia for rectal operations, Dr. Levison stated that he employed a one-half per cent solution of stovain and that he follows Reclus' technic in detail. He stated that it was possible to perform all the operations upon the rectum, such as divulsion of the sphincter, fistula in ano, and the Whitehead operation under this anesthesia. The following are the steps of the Whitehead operation for hemorrhoids that Dr. Levison performed before the Society under stovain anesthesia.

In the operation about fifteen cc. of a one-half per cent solution of stovain were consumed. The patient was placed in the exaggerated lithotomy position using the clover crutch. The operator explained that his reason for employing the crutch was due to the fact that with the stirrups that are generally employed on the table, the perineum cannot be satisfactorily exposed. Then a number of very small tampons of different sizes (to which a thread had been attached) and which were saturated with a one-half per cent stovain solution, were separately introduced through the anus, the smallest first. With the anus retracted on the one side by the operator and on the other side by the assistant the patient was told to bear down; and then each tampon was grasped with a hemostatic forcep and pushed into the rectum. After about twelve of these tampons had been introduced, anesthesia of the rectal mucosa was complete; then a syringe filled with a one-half per cent stovain solution and mounted with a curved hypodermic needle, was introduced into the anal skin margin and the entire cimcumference of the anus was infiltrated with this solution. The gloved finger was then introduced into the anus and a long straight needle mounted upon a hypodermic was introduced into the skin deep into the tissues parallel to the rectum until the sphincter was reached. The sphincter was also infiltrated. This was easily recognized by the resistance offered to the needle. The fluid was injected into the tissues as the needle was introduced. The finger was introduced into the rectum to obviate the entrance of the needle into the rectum. At this stage the sphincter ani was fully paralyzed and it was devoid of sensation. It was easily divulsed and the Whitehead operation was completed without causing the patient any pain. After one hour he was allowed to get up, dressed himself and he stated that he felt no inconvenience whatever. He then went home, a distance of twelve or fifteen miles, in an automobile. The dressing consisted of a three-quarter inch tube wound with gauze upon which vaseline had been smeared and which was introduced into the rectum. This, Dr. Levison stated, was allowed to remain in situ for five days, during which time the patient is kept constipated and is allowed nothing but a soup diet. After this the patient is practically recovered.

The following is a brief synopsis of Dr. Levison's paper on "Lumbar Appendicectomy":

Often when the abdomen is opened during an attack of acute appendicitis, it is not infrequent that the search for the affected organ is futile. As this is not a new or unique experience to many operators, it is the belief of the writer that, in cases such as these, the appendix might be discovered if sufficient care were taken to determine its position previous to operation.

Localization cannot be accomplished unless the so-called "McBurney point" within certain limits be ignored, because this spot teaches us that the appendix is involved only when it is found within this area. A case which bears out the above occurred in the writer's experience recently, where an operation upon a young woman revealed a gangrenous appendix situated in the pelvis. The necrotic organ had produced an abcess with consequent bowel obstruction.

The case, which first attracted the attention of the writer concerning this subject, occurred in an individual who had never been sick prior to his present illness, at which time he was seized with a violent abdominal pain. He was given a cathartic and on the following day was fairly comfortable; temperature, 100.6°; pulse, 90. On the day following he was comparatively comfortable, but there was some abdominal tenderness upon pressure. He was brought into the hospital the following morning by his family physician with a temperature of 102.4°; pulse, 96. He had no pain upon movement, but had some tenderness to pressure. He was seen by the writer at 3 o'clock in the afternoon; temperature, 102°; pulse, 100. Leukocytes 18,000, 80 per cent of which were polynuclear.

When questioned as to whether he had pain, he answered that he had none. He had no pain upon movement, and was able to turn in bed without any discomfort. Abdominal examination revealed no tenderness whatever in McBurney's point or in the right iliac region. Deep pressure made in the region of the anterior superior spine (lumbar region) caused the patient considerable pain. At this point there was marked rigidity. Dullness in the right flank corresponded to a continuation of the mid axillary line. The dullness, while it was not continuous with the liver dullness, occupied the right lumbar region almost completely. The tympany of the colon could be elicited so that the dullness was tympanitically dull, not absolute. There was no jaundice present. The diagnosis of recto-colic appendix was made to the exclusion of gall-bladder condition; as the urine was normal, paranephritic abscess was ruled out. This conclusion was reached in consideration of the tympanitic area between the dullness and the liver, despite the fact that the appendix region did not appear to be involved.

An incision four inches long was made two finger-breadths above the crest of the ilium, extending to one inch in front of the anterior spine. The gridiron operation was performed with more difficulty than is experienced in front on account of the thick bellies of the abdominal muscles which were encountered. There was no trace of exudate or fluid found within the abdomen when the peritoneal cavity was opened.

Palpation of the colon in front and behind, did not reveal the presence of the appendix and it was only by strong retraction of the colon forwards that its posterior surface was exposed and with it a gangrenous appendix which extended from the anterior superior spine to the under surface of the

liver. The appendix was gangrenous from its base to the extreme tip, being the only appendix within the writer's recollection which was found completely necrosed. There was no induration and nothing to indicate the presence of the appendix, which would never have been discovered if it had not been exposed to direct view. It was removed by ligation. Convalescence was without particular incident, with the exception of the formation of a fecal fistula, which closed within three weeks.

Recapitulation.—The rule to be observed in the surgery of the appendix is to make the incision correspond to the position of this organ. It can frequently be localized if the situation of the exudate and rigidity is kept in mind. When the exudate is situated in the loin, a diagnosis of a retrocecal appendix should be made, excluding, as far as possible, paranephritic abscess and gall-bladder disease. If low down, the differentiation from pelvic disease should be made. Naturally the classic form must first be thought of. Upon looking over the literature, I find that this subject, strange to say, has been almost entirely overlooked.

Some thirteen years ago, at a time when it was considered good surgery to hunt for the appendix, despite the condition of the patient, the writer's practice was to discontinue the search as soon as he realized that this could not be properly and successfully accomplished. Largely through the influence of Dr. J. B. Murphy this practice has now been generally adopted, so that today it has been accepted as a principle. It is the conviction of the writer, that in those cases where the appendix is not discovered, that the offending organ is situated in the retro-cecal space. With the appendix in this position and the abscess incised in the usual manner either through the Lennander or McBurney incision, the pus is evacuated, but the appendix is not discovered because it is practically extra peritoneal. On several occasions in the author's experience when the appendix has not been found at the operation and when a recurrence has taken place, the diseased appendix at operation in each instance has been found in the retro-cecal position, and then only after a long and tedious search. I fancy similar experiences have occurred to many surgeons.

The discussion was opened by Dr. Schmoll of San Francisco, who said that deep appendiceal troubles often simulate renal stones. Centrifugalized urine would generally clear up the confusion, although not always. Colitis often simulated it. He had seen a few cases of acidosis following appendicitis. He did not believe that the clinician could locate the position of the appendix, although he may make a fairly good guess; nor did he think its particular location the all important feature. It was more important to first decide if the patient had appendicitis, then was it a case for operation. Recurrent appendiceal pain after the appendix had been removed has been found due to renal calculi.

Drs. Clark, Rowell, Crosby and Hamlin completed the discussion.

Dr. W. A. Clark then presented the following:

Report of Case of Ruptured Extra Uterine Pregnancy Complicated With Diphtheria in Which Large Doses of Antitoxin Were Used.

The following case is reported because of a possible record dose of diphtheric antitoxin being given:

May 18, 1908, 11 a. m., called by Dr. Reynolds of Hayward to see Mrs. R., who presented the classic symptoms of ruptured gestation, the rupture having taken place at 9 p. m. of the evening previous. At this time her pulse was 162. An hour and a half later she was placed on the table in her own home, pulse being 174. On opening abdomen the usual conditions incident to a ruptured tubal pregnancy right side were found. Patient was returned to bed in a half hour doing quite well, the appendix also being removed. The pulse with the salt infusions having dropped to 120 at 4 p. m.

At 3:30 p. m., May 19th, Dr. Reynolds reported temperature 103°, pulse 144, respiration 40; at 6 p. m., temperature 104°, pulse 158, respiration 44; patient restless, feeling quite strong, and some pain in the abdomen. Temperature varied during the night between 104 and 101°, pulse always high, 140 to 158, and respiration 36 to 40. She also complained of feeling chilly. Temperature gradually fell until May 22 at 8 a. m. it was 99.5°. At no time, however, did the pulse go below 140. Nurse at this time reported considerable phlegm in throat, but a comfortable night. At 3 p. m. the same day the patient complained of sore throat. On inspection a typical diphtheric throat was encountered. This diagnosis was afterwards confirmed bacteriologically. Eight thousand units antitoxin were given at 9 p. m.; May 23, 8 a. m., 11,000 units; 10 p. m., 6,000 units given. May 24, 10 p. m., 14,000 units. May 25, 10:30 p. m., 15,000 units. May 26, 3:45 a. m., temperature 100.8°, pulse 140, respiration 32. Pulse increased to 160 at 4:50 a. m., remaining so for several hours. Complained at 9:30 a. m. sharp, shooting pains aronnd the heart. Dr. Frank Adams, who was called in consultation, as the membrane had not shown any signs of disappearing, advised us to continue the antitoxin, but at shorter intervals, and also to crowd the whisky. Abdominal wound showed signs of infection. Five thousand units given every three hours; total, 10,000 for the day. May 27, 5,000 units every three hours; total, 30,000. May 28, 35,000 units given. Abdominal wound opened up; discharged one-half cup of pus. Infection proved to be only in the wall.

May 29, 40,000 units. Temperature 99.2° to 99.8°. Pulse ranging between 124 and 128. Respiration 20, but membrane showing no signs of coming off.

May 30, 30,000 units given. Temperature 99° to 100.4°. Pulse 132. Respiration 22 to 24.

May 31, 31,000 units given. Temperature 99.5° to 100.8°. Pulse 122 to 126. Respiration 20.

June 1, 55,000 units given. Temperature rose to 101.7. Pulse 140. Respiration 32.

June 2, 80,000 units given. Temperature, highest, 101.3°. Pulse 140. Delirious.

June 3, 40,000 units. Highest temperature 105°, lowest 98.6°. Highest pulse 160, lowest 132.

June 4, 35,000 units. Highest temperature 101.3°, lowest 98.8°. Highest pulse 148, lowest 130.

June 5, 40,000 units. Highest temperature 103.4°, lowest 100.4°. Highest pulse 160, lowest 140. At 6:30 a. m. had decided chill.

June 6, 55,000 units. Highest temperature 103.1°, lowest 101°. Highest pulse 176, lowest 140. Dr. Crosby saw her at this time and advised that antitoxin be discontinued for a while to see if we were having any trouble from serum poisoning. Pelvis at this time was found to be absolutely clear. The alcohol and digalen were also discontinued.

June 7, 30,000 units. Highest temperature 103.2°, lowest 102.2°. Highest pulse 188, lowest 144.

June 8, no serum. Highest temperature 105.1°, lowest 102.6°. Highest pulse 168, lowest 148. Throat somewhat better.

June 9, highest temperature 104°, lowest 101.6°. Highest pulse 180, lowest 140.

June 10, Dr. Frank Adams, Dr. L. P. Adams, Dr. Crosby, Dr. Krone and myself saw her with Dr. Reynolds. Highest temperature 103°, lowest 101.2°. Highest pulse 170, lowest 140.

From the consultation there appeared to be beginning trouble in the pelvis somewhat above the right broad ligament, yet not clearly defined. The throat was clear at the time, having been so since the 8th, the first time that it had remained clear for more than two hours.

The patient has made a slow convalescence and is now practically well. Other than a slight scarlet

fever like rash appearing two days after the serum was discontinued, no deleterious symptoms were noticed from the large dose. The nurses reported that after every dose of antitoxin the heart was decidedly stimulated. Dr. Reynolds, who had charge of the diphtheria end of the case, and myself, take this occasion to thank Drs. Adams, Moore and Krone for their gratuitous services, as the patient certainly owes part of her life to their advice, and also to the Cutter Laboratory, who furnished all the serum, letting Dr. Reynolds use all he thought necessary even if they were not paid at all.

The largest record dose of antitoxin I am able to obtain is 280,000 or 287,000 units, which the Cutter people say a patient in one of the eastern cities received.

Mrs. R. received 555,000 units of diphtheria antitoxin.

W. LEWIS EMERSON,
Secretary.

PUBLICATIONS

An Aid to Materia Medica. By Robert H. M. Dawbarn, M. D., Professor of Surgery and of Surgical Anatomy, New York Polyclinic Medical School; Professor of Surgery, Fordham Medical College, New York; Visiting Surgeon to the City Hospital, New York. Fourth Edition, Revised and Enlarged. By Eden V. Delphey, M D. The Macmilan Company, New York, 1908.

So well known is the excellence of the previous reprints of this book that the present edition calls for little comment by the reviewer. The changes in the Pharmacopeia of the Eighth Decennial Revision have made necessary greater or less changes in the text, but as formerly the aim has been to present in brief space and tabular form all the drugs and preparations recognized by the Pharmacopeia, with their doses, composition, strength, synonyms, pronunciation, and in the case of drugs of vegetable origin the derivation and habitat. Other helpful features found in the previous editions, such as rules for the dosage of medicines in childhood, the chapter on prescription writing, dangerous abbreviations in prescription writing, the article on incompatibility, etc., have been retained.

For students, the volume will doubtless prove useful since examiners require much that the practitioner soon lays aside; for graduates it may serve as a ready reference book. Whilst our present conditions certainly create a want for works of this character the reviewer feels with Dr. Delphey, who has assumed the responsibilities of the present revesion that "it would be the part of wisdom for physicians to drop many (drugs) which they are now using, to get thoroughly acquainted with a few drugs and not change to a new or much lauded drug until he finds an indication which the old fails to meet."

A. J. L.

Neurographs. A Series of Neurological Studies, Cases, and Notes. Editor, William Browning, Ph. B., M. D., Vol. I, No. 2.

We called attention to the first number of this publication at the time of its appearance in a note which was unfortunately so marred by misprints that whatever notice it may have obtained was very likely bestowed rather on those errors in the printing than on the enterprise on which it was our intention to animadvert. We therefore believe that we are doing no more than our duty in again seeking to call attention to Neurographs, now that a second number has been issued.

This number is devoted wholly to Huntington's career and Huntington's Chorea. Huntington's Chorea, it will be remembered, was first described from cases occurring in Long Island, and Long Island is the home of Neurographs. The number before us is adorned with portraits of Dr. Huntington, contains a number of articles on the history of Huntington's Chorea, one of them by Professor Osler, an article on the disease in German by Professor V. Strumpell and one in French by Lannois and Paviot, together with much other material bearing on the subject, and concludes with a valuable biography. This issue of Neurographs refreshes by its exhibition of scientific enthusiasm and excites sympathy for its healthy local pride. L. N.

A CRITICISM OF VALUE (?).

The following communication has been received for publication and is here given exactly as received for the reason that it shows so clearly the chaotic cerebrations of the majority of the "kickers." It seems unnecessary to comment on the originality displayed in spelling, grammar, etc.:

Los Angeles Cal. June 12 1908.
California State Medical Journal
San Francisco
Cal.

Is the California State Medical Law Unjust?
Every question is debatable from two sides and every law is considered from two view points; so therefore it depends materially upon which side we may happen to be looking, whether we can see with clear vision or not.
I am trying to look at the State law in reference to Medical applicants for licenses as a once time outsider; (i. e.) outside of the pale of the sanctum sanctorum of the Medical laws or fraternity of the State of California, but now able to look over the fence from the inside.
To begin with, I am not one who do not believe in State laws, for I do but that those laws be just laws, laws that do not work a hardship upon any honorable man in the profession; in fact I am a believer in a National Board of Examiners, & believe it to be cansistent for a man who is competent of practiceing in one state to be equally competent to do so in another, having faith in the profession, I believe the day is not far distant when we will have a National board, or its equivilent in a reciprocity law, wherein a licensiate by examination will be registered in any state in the union, but until that time & while the California State Board continues its policy of closed doors against competent men, I believe they should modify the law in one respect at least and that is in regards to the necessary requirements for a certificate.
So far as the School requirements are concerned, I believe in keeping the standard here as high as anywhere, but the clause that says, first that a general average of 75% must be made & that for longevity applicants there will be granted five % on there general average for the first & every ten years of active practice therafter & then deliberately making this clause retroactive or invalid by a following clause stating that the applicant must make not less than 60% in any one branch or subject & if he does so shall fail, I contend is unfair.
Some men who have practiced 10—20— or even 35 years, who have a credit from active practice of from 5 to 15 % no matter whether they make the required 75 % and fall below 60% in any one branch must needs be re-examined & pay another fee.
Of course the majority of men formulating the State laws are men who have never had to take state board examinations, & possibly would not be as competent, as many a man whom their law turns down, and it is all well & good for them to say we must uphold the law & so say I But eliminate that clause & give them a fair deal, for it would be comparatively easy for men long in the practice of medicine, to pass the state board of examination if they were granted 5 to 15 % as the case may be & it

were applied to there general average, but it is almost impossible for many to do so, if the requirements of 60 % in each branch is insisted upon.

DR. H. G. M.

TO THE MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

The following appeal, issued by the Journal of the South Carolina Association, is sound. Will the members of our California Society follow the excellent suggestion?

To the Owners of this Journal, the Members of the South Carolina Medical Association:

You know that reciprocity encourages business, don't you? Outside of common decency, and leaving aside mere etiquette, it's good business to stick to your friends, isn't it? Now, who is your friend—the smooth-tongued spiel-artist who swears undying love and admiration for you as long as he is in your hearing, and laughs behind your back at your ease gullibility and willingness to do business with him at an expense to himself of nothing more than a few lungfuls of hot air? Or is your friend the fellow who thinks enough of you to support your efforts for betterment and puts up his fair share of cash for the promotion of straightforward business intercourse with you and for the stimulation of legitimate professional business and its accompanying trade?

The last, you say? Certainly. There are no hopeless idiots among the owners of this Journal.

All right; so far, so good. But what are you doing for your friends who are helping you in your work? And what will you do for the pretenders who are "working" you for their own help?

Read the following colloquy, which actually occurred very recently in our hearing:

Affable Salesman, entering Doctor's office: "Doctor, I am representing the Blank and Blank Laboratories, of Analaska, and I have a very elegant preparation, of which I am going to leave you samples, of the best, positively the very best, most scientific mixture of laxative salts ever offered to your discriminating profession. This is——"

Doctor, interrupting: "Does your firm advertise in the Journal of our State Medical Association?"

Salesman, with feigned pained surprise: "Er—no. Why do you ask?"

Doctor, cheerfully: "Oh, because there's really no reason why we doctors should support a firm that is not willing and ready to support us in our efforts to better existing conditions."

Salesman, affecting indignation: "Do you mean to tell me, sir, that simply because a firm does not advertise in your Journal, you refuse to consider or test its products, no matter how superior they may be—no matter how many lives they may save?"

Doctor, sweetly: "My dear man, how many firms in this country put out the best product on the market? And how many of them come in here to tell me all about it? Do you suppose for a minute that I, or any other doctor, have time to try them all on their merits? Do you now, eh?"

Salesman, unwillingly: "Well, no, I don't suppose you have."

Doctor: "Very good. Then isn't it reasonable and proper that what testing and patronage we have to place should favor first the firms that maintain close business relations with us—our business friends?"

Salesman: "Yes, I guess that's true. I am going to take this matter up with the house. What's the Journal's business address?"

Now, the point is that the Journal needs the support of good ethical advertisers, and if every doctor who is part owner of the Journal will pursue the above line of thought, speech and action the effect would be magical. As long as these houses think they can work us without advertising, they will hold back. It is up to us, every one of us, to treat them as if they were from Missouri, and show them! By doing this we are at the same time giving loyal support to those houses that are represented in our pages, which is only decent and proper. They are the ones to whom we should always give preference, and we again urge all of our joint owners to follow up this principle and always to insist distinctly when buying supplies that you wish and will have our advertisers' products—there are none better.

We have a most wonderful and estimable concord of thought in the profession of our State. What remains to be acquired is unity of action. Are there brains and energy enough in our membership to accomplish it? We think so.

This is practical, hard-sense talk, and we appeal to every individual member for active, intelligent co-operation.

Faithfully,

YOUR JOURNAL.

THE SAMUEL D. GROSS PRIZE—FIFTEEN HUNDRED DOLLARS.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia," on or before January 1, 1910.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

WILLIAM J. TAYLOR, M. D.
RICHARD H. HARTE, M. D.,
DE FOREST WILLARD, M. D.,
Philadelphia, June 15th, 1908. Trustees.

THE FIRE INSURANCE COMPANIES AND THE SAN FRANCISCO FIRE.

A statement endorsed by the San Francisco County Medical Society.

We, as physicians of San Francisco and members of the San Francisco County Medical Society, wish to express our gratitude to those fire insurance companies that quickly adjusted their losses after the great fire and conveyed prompt relief to those who trusted them.

It is now more than two years since that greatest of all fires, and we feel that time enough has elapsed to permit a just view of the situation. The professional classes, such as lawyers, doctors and dentists, were particularly hard hit, as their offices were in the heart of the city. During those awful days no

conveyances could be obtained and instruments, furniture and libraries, the patient collection of many years, were swept away in a few hours. In many instances no insurance at all was carried, and in many others the insurance companies were unsound or unfair. We all, however, profited, if not directly, yet indirectly, by those companies that met their obligations. The effect of their good work is lasting even now, and is enabling San Francisco to stand the present financial stringency better than almost any city in the union. We, as physicians, are profiting in the general well-being of the people.

We feel also that in making out a list we should be liberal in our construction. Any company that paid within ten per cent of the full value of its policies should be reckoned as good. We must not forget that the insurance companies also suffered, and that it was a sore trial to them to pay out suddenly the vast sums required. That so many insurance companies took their punishment so well is one of the marvels of modern finance, and that so many American companies did well is just cause for pride. And we may here express our appreciation of the gallant way our local companies met their losses. At the time of the fire there were two local companies doing business in San Francisco and their stock was mostly owned within the city. These stockholders lost not alone through their fire insurance stock, but shared with others in the general calamity. The California Fire Insurance Company paid its obligations in full as soon as the losses could be determined. The other company, the Fireman's Fund, lost very heavily, and to add to their trouble, through an accident their vaults did not hold, and consequently all their books were burned, thereby destroying evidence of either debits or credits. They, however, reincorporated, found what they owed and paid in cash, at first fifty per cent of their losses, then an additional six per cent, and gave stock for the rest. They are doing an excellent business, their stock is rated as excellent, and they have already paid a further dividend of five per cent. It is said by competent authority that those who insured with the Fireman's Fund have already received over eighty per cent of the face value of their policies, and they undoubtedly will ultimately be paid in full. This is the first time in the history of fire insurance when the local companies have not failed, and shows, as nothing else could, the ability of the business man of San Francisco to take punishment. We understand the Fireman's Fund made an excellent record in the great Chicago fire. It is an interesting thing to see the same determining principles coming down through long years in an aggregation of human beings—the personnel changes, but the spirit does not.

We hope this list may prove useful to our fellow physicians in other cities. Any city may be visited by a conflagration, and it is well to know those companies which are so amenable to public opinion as to pay their losses. Public opinion is the only force that can be relied on to compel any of them to meet their obligations, for, in the courts, they can so worry and delay you, no matter how good your case, as to make, even if fortunate enough to win, your victory a barren one. Their policies also are so worded as to enable them to contest any claim. This ingenious wording of the policies is a matter of self protection, as it is often so difficult to prove arson. If, therefore, a company feels certain arson has been committed, yet cannot prove it, they contest the payment on some other ground. In insuring, therefore, it is absolutely futile to look at the terms of the policy, as they, like those of a note one signs in borrowing money from a bank, are all formally set down. As a matter of fact, one subscribes to the conditions of such a note, knowing very well that the harsh rules will not be enforced except in case of trying to evade meeting the debt.

Many insurance companies have on their policies a notice in prominent type, "Read your policy." Do not read your policy, for if you should hand it for minute examination to half a dozen lawyers versed in insurance law they would give you just six different opinions. On the contrary, therefore, do not read your policy, but read this list. This list, which has been carefully revised from a list published in the California State Journal of Medicine of August, 1906, and according to the excellent lists given in the report of the San Francisco Chamber of Commerce and in Best's Special Report upon the San Francisco Losses and Settlements, should be kept for reference. The names of the different insurance companies are in many instances so similar, and there are so many of them that it is impossible to bear them in mind.

Aetna of Hartford.
American of Newark, N. J.
American Central of St. Louis.
Alliance of Philadelphia.
Atlas of London.
Agricultural, Watertown, N. J.
British America, Toronto, Canada.
British American, New York.
California of San Francisco.
Continental of New York.
Connecticut of Hartford.
Citizens of St. Louis.

Fireman's Fund Insurance Corporation, San Francisco.

German-American of New York (policy contained earthquake clause, which was not taken advantage of).

German-Alliance of New York (policy contained earthquake clause, which was not taken advantage of).

Glens Falls of New York.

Hartford Fire of Hartford, Conn.
Home of New York.
Insurance Company of North America, Philadelphia, Pa.
Liverpool and London and Globe.
London Assurance Corporation of London, Eng.
Law Union & Crown of London.
Mercantile Fire & Marine of Boston.
Michigan Fire & Marine of Detroit, Mich.
New York Underwriters' Agency, New York, N. Y.

New Hampshire of Manchester, N. H. (policy contained earthquake clause, which was not taken advantage of).

New Zealand of New Zealand.
Niagara of New York.
North British & Mercantile of London, Eng.
Northern Assurance Company, London, Eng.
Northwestern National of Milwaukee.
Phoenix, Hartford, Conn. (claims settled without reference to an earthquake clause its policy contained).
Providence-Washington of Providence, R. I.
Phoenix Assurance, London, Eng.
Pelican Assurance of New York.
Pennsylvania Fire of Philadelphia, Pa.
Queen Insurance Co., of America, New York.
Royal Insurance Co., Liverpool, Eng.
Scottish Union & National of Edinburgh, Scotland.
Springfield Fire & Marine of Massachusetts.
St. Paul Fire & Marine of St. Paul, Minn.
Sun Insurance Office, London, Eng.
Security Insurance Co., New Haven, Conn.
State Fire, Liverpool, Eng.
Teutonia, New Orleans, La.
Union Assurance Society, London, Eng.
Washington Fire, Seattle, Wash.
Westchester, New York, N. Y.
Western Assurance, Toronto, Canada.

emedies."

REASONABLE REQUEST FROM A PHARMACIST.

Dr. ———

Dear Sir: As your Medical Journals are at present leading in a fight for standard ethical preparations as against nostrums, perhaps you will kindly forgive me for assisting in a good work.

A few days ago I had one of your prescriptions for Papine, Battle & Co. Now these advertising fakirs claim that their preparation contains all of the good elements of opium with the bad ones left out, and their dose is one teaspoonful.

Our tincture of opium deodorated of the pharmacopeia is an extract of opium containing morphine, codeine and narceine, with the obnoxious alkaloids thebaine, papaverine and narcotine eliminated. To make a preparation from this containing an equivalent of one grain of opium to a teaspoonful would take say

Tr opi deodor M X
Elix Simplicis ad zi

and this would be exactly equal to the advertised papine in every respect.

So far papine is possibly a good preparation, but look at the sequel. Papine costs 71 cents per 8 ounce bottle, or per pint $1.42. Any druggist can make up the other for per pint 45 cents, or a difference in favor of the druggist in Los Angeles against the advertiser in St. Louis of about $1, or in other words he gets over three times what the goods are worth.

The doctor is a busy man and the quack agents are glib tongued, and it seems so much easier to write one word than perhaps half a dozen; but ask yourself, is it right to turn a druggist into a mere dumper of ready-made nostrums from one bottle to another?

Some of their preparations undoubtedly are good, but one remark will apply to all: they are extravagantly priced and in about all cases the druggist has the remedies on his shelves ready for mixing according to the doctor's orders, if he but take the time and trouble to say what he requires.

Of course, I keep papine and other things like it in stock, and always dispense it when prescribed, but it is needless to say I would rather not.

With best regards and wishes and apologies for tiring you out, I am,

Yours very respectfully,
(Sig.) ROBERT FULTON.

COUNCIL ON PHARMACY AND CHEMISTRY, ADDITIONS TO NEW AND NON-OFFICIAL REMEDIES.

The following articles have been added to the list of new and non-official remedies approved by the Council on Pharmacy and Chemistry, which was published in the Journal August 1:

Beta-Eucaine Lactate (Schering & Glatz).
Capsules Glycerophosphates Comp. (Mulford Co.).
Iodalbin (Parke, Davis & Co.).
Iodalbin Capsules (Parke, Davis & Co.).

ERRATUM.

To the Editor of the State Journal:

In the August number, on page 269, I am quoted as saying "that operations done **without** a general anesthetic." I did say "operations done **under** a general anesthetic." Kindly make the correction and oblige. Respectfully yours,

KASPAR PISCHEL.

CHANGES OF ADDRESS.

CHANGE OF ADDRESS, TO AUGUST 15, 1908, noted since the Register and Directory went to press.

C. E. Turner, from Vallejo, Cal., to Big Pine, Cal.

A. H. White, from Crockett, Cal., to 2667 Mission st., San Francisco.

Alfred W. Perry, from 1914 Sutter, to 1151 Polk st., San Francisco.

Maria Congdon, from 315 Pico st., Los Angeles, Cal., to 1153 So. Grand ave., Los Angeles.

Edward Selzer, from 542 Kearny st., to 115 W. Santa Clara st., San Jose, Cal.

Verlin C. Thomas, from 1871 Sutter, to Westbank Bldg., San Francisco.

P. L. Rookledge, from San Luis Obispo, Cal., to Cambria, Cal.

Adelaide Brown, from 3146 Clay st., to 2520 Sacramento st., San Francisco.

Guy C. Reily, from Grant Bldg., Los Angeles, to Broadway Central Bldg., Los Angeles, Cal.

Barton Dozier, from Grant Bldg., Los Angeles, to 952 Bonnie Brae, Los Angeles, Cal.

C. V. Fisher, from Antioch, Cal., to Klamath Falls, Ore.

C. S. G. Nagel, from S. W. cor. Sutter and Polk sts., to Hastings Bldg., 162 Post st., San Francisco.

Henry D'Arcy Power, from 1065 Sutter st., to Butler Bldg., 135 Stockton st.

Annie W. Nixon, from 936 Gratton st., Los Angeles, to 1624 Shatto st, Los Angeles, Cal.

Ross A. Harris, from Merchants' Trust Bldg., Los Angeles, to 301 Broadway Central Bldg, Los Angeles.

Rilla G. Hay, from 111 Potomac Bldg., Los Angeles, to 3906 Sunset Block, Los Angeles, Cal.

Pat. S. Dougherty, from 217 So. Broadway, Los Angeles, to 318 Wright & Callender Bldg., Los Angeles.

C. W. Anderson, from H. W. Hellman Bldg., to 226 Bradbury Bldg, Los Angeles.

Harris Garcelon, from Douglas Bldg., Los Angeles, to 612 Pacific Electric Bldg., Los Angeles.

Phillip August Bill, from Delbert Blk., to 585 California st., San Francisco.

Seymour Ball, from Long Beach, Cal., to Elsinore, Cal.

Wm. Banks, from Stirling City, Cal., to 1498 9th ave., San Francisco.

W. M. Wightman, from Angel Island, Cal., to Callao, Peru.

Alfred L. Draper, from 2400 Pacific ave., to 2502 Washington st., San Francisco.

A. R. Fritschi, from 1458 Sutter st., to Butler Bldg., San Francisco.

H. B. A. Kugeler, from 2510 Washington, to 2224 Baker st., San Francisco.

D. D. Lustig, from 2502 Washington st., to 146 Grant ave., San Francisco.

Walton Preston, from 1823 Fillmore st., to 906 Hayes st., San Francisco.

Rufus L. Rigdon, from 2101 Webster st., to Chronicle Bldg., San Francisco.

Adolph B. Baer, from 3590 Sacramento st., to N. W. cor. Polk and Sutter sts., San Francisco.

Deaths.

Santa Cruz Co.—James F. Christal.
Los Angeles Co.—Roy F. Clark.
Humboldt Co.—Wm. M. Michael.
San Francisco Co.—Alfred McLaughlin.
Sonoma Co.—Samuel S. Boyle.

LICENSES REVOKED.

At the last meeting of the State Board of Medical Examiners, the licenses of B. B. Lee and J. C. Anthony, to practice medicine in California, were revoked.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI OCT., 1908. No. 10

EDITORIAL NOTES.

TIME TO GET BUSY.

With the passing of Summer and the coming of Fall, it is time for us to take up, more actively, work in our county societies. Vacation time is over — it is to be hoped that every one of us has had a much-needed rest—and we should come to the busy months with renewed zest for that work which not alone helps us each one as individuals, but which is a most important part of our duty to our profession and to the public. The county medical society should be a real factor of the greatest influence in your county. If it is not so, stop and think; it is your own faut. What have you done to make it what it should be? Do not think of what some other physician has or has not done, but what have you done? Is the secretary active? Does he take a lively interest in getting up attractive meetings? Does he keep the members posted as to what is going on in the county? Does he send in good and full reports of the doings of your society to be published in the JOURNAL, so that all members may be kept in touch with the society work? If he does not, it is as much your fault as any one's, for you should help him with your advice and suggestions or else see that you have a different secretary. Some secretaries are getting lazy. They are not sending the reports of their society meetings and the news of doings in their counties, as they formerly did and as they should now do. That is not as it should be. There seems to be a tendency to drift back into a state of apathy, in some counties, from which condition the physicians were roused a few years ago when the county societies were organized. Are you passively guilty of this, too, or are you taking as active an interest in the society work as you know you should? A county society should be neither a merely theoretical organization nor a mutual admiration society; it should be a school for medical men in which they may be kept abreast with medical advance and so be able to give of their best to their patients. Is this what your county society is? If not, there is something wrong with it and it is up to you, each one as an individual, to correct it. Will you do it?

SUPPOSED TO WORK.

The secretary of a county medical society is supposed to do a lot of work willingly and cheerfully, knowing that, in general, he will not receive the thanks to which he is entitled; indeed, much of his work will be entirely unappreciated by the members. He is not supposed to sit upon that which the Lord intended to be either sat upon or kicked and do nothing but enjoy what he may be pleased to regard as an empty honor. There is no empty honor in holding down a secretaryship if the holder does his work. "As the secretary, so the society," is a pretty good and a pretty truthful saying. A good, active secretary, keeping all the members posted as to what is going on, seeing to it that good material is provided for each meeting, enthusing those who are lethargic, stimulating through his own enthusiasm, constantly looking to the uplift of the society and the profession in the eyes of his community, can do an enormous amount of good. He can do it even if the meetings are, at first, not well attended. Even a few men gathered together to do some really good work, to exchange some really worth while ideas, will have, in no long time, a tremendous effect upon the other physicians in that vicinity. This is not idle theorizing; it is demonstrated fact. A short time ago one of the larger societies in the state was nearly moribund. Scarce a handful of men came to the meetings; when they came, there was nothing of interest for them and they continued to come merely that the society should not absolutely die. Dues were long in arrears and no effort had been made to run the society on a business basis. And then came a change of secretaries. Now the meetings are well attended and attractive programs are offered. Once or twice a month the secretary sends out a circular letter to all the members calling to their attention things of interest. That society which was nearly dead, is very much alive and its reports furnish monthly material for the JOURNAL, of interest and value. If this can be done in one place it can be done in another. Will you help to see that it is done?

WHAT WE WORK FOR.

"What is the use of all this work for medical organization?" Dear man, the uses are so many that one might write books about them. There is, first of all, the duty which you owe yourself and your patients. You have assumed, with the taking upon yourself of professional rank, certain obligations, not the least of which is to give to your patients the best of up-to-date medical knowledge. Can you possibly do this if you are out of touch with what is doing and progressing in medical science? Can you keep in touch with medical progress if you shut yourself up like a clam and pay no attention to what other men are doing and reporting? You are the worst kind of an utter fool if you think you can, and you have no right to be turned loose upon an unsuspecting and confiding public. No man, of himself and alone, can possibly keep up with what is being done, no matter how many journals he takes and tries to read, unless he comes in contact with other men and hears of their successes, mistakes and experiences. Furthermore, you should give of your own store of experience. Wherein you succeed may be just the little particular which the other fellow misses and so does not help his patient as much as he could if he had the knowledge of that one little thing which is yours alone. That is nothing more nor less than your duty. And again, you know that your professional life is a very lonely one. You see only sick people and they all think you are about the smartest there is, or they wouldn't have you. And pretty soon you get the same magnificent idea, and then you look down upon the others of your calling whom you do not meet and know, and you think you are a little bit better than they are. But, really you know, you are not. Go to your county society, help make it what it should be, give of what you have and take from what others give, and you will soon learn to lose some of this enforced self-conceit. You are not the whole thing, as your patients would make you believe, and possibly the man you particularly look down upon may do something a whole lot better than you ever thought of doing it. And more than this, your profession exists to protect the public, often in spite of themselves and their ignorance. Are you doing your duty here? Can you do it unless you help to make your county society the power in the county which is the right and the duty of our profession?

CONSIDER THE QUACK.

How are the people to be protected from the quack, the faker and the charlatan, unless you, who know the exact conditions, step out manfully and shoulder your duty? The people do not know what you do of the pretender to false knowledge, and they can not know unless our profession tells them. How can the legislature, made up of ordinary laymen, enact proper laws for the protection of the people when they do not know or realize what the people are to be protected from, or why? And who is to give them this information if we do not? Comes the Governor of the state to our society and asks that members of it be elected to the legislature so that he may have a source of reliable advice and information. He realizes his own limitations and his own ignorance and asks that we help him. How much more ignorant must be the general average of the lay citizen? Is your county society—and are you—doing what should be done in this direction? If not, get busy; do it now; do it right away. See that your society takes up the question of quackery with the citizens of your county. Get the ministry interested and show them what a lot of harm they are doing in allowing their flocks to be preyed upon by the Viavi fakers and the other brands too numerous to mention. Show the lawyers and the judges of your county what the medical law really is; what it means; what it strives to do and how it is intended to protect, not you or your profession, but the ignorant sick man. Have you done this? Have you ever tried to do it? If not, there is another duty you have neglected. And it should be done by your county society. That is another of the numerous reasons for organization. Through a solid, friendly, studious, hard working county society, these things can be so presented to all classes of the people that they will demand the legislation for their protection which they now look upon with suspicion—for they do not understand—whenever we recommend it to the uninstructed legislators. To be sure, our profession is benefited incidentally by the suppression of the quack, for he brings constant disgrace upon us all through his methods and his pretensions. Hundreds of letters come to the JOURNAL every year, protesting against the presence of some quack in some community where the pretender is throwing open ridicule upon the upright members of our profession. The people do not understand and they are an easy prey. But once let them understand, once get the leaders of the churches, the women and the women's clubs interested, once let them see what the real facts are, and the day of the quack will be speedily over.

MORE WORK.

Consider the terrible ignorance of the people on the subject of preventable diseases. It is appalling. In these United States a single preventable disease kills more people every day than were killed in the Spanish-American war! And mind you, *a preventable disease,* for tuberculosis is perfectly preventable. Over 400 persons die each day from a disease that could be prevented, wiped out, if the people knew and understood. Is it any part or portion of our duty to make them understand? Is it not a part of your duty to see to it that they are educated as to the nature of tuberculosis and the means at hand for preventing its spread? We have recently seen the organization of the California Association for the Study and Prevention of Tuberculosis. The work of this Association will be very largely directed toward the education of the public. Is it not also a part of the duty of the county medical society to co-operate in this

magnificent undertaking by holding meetings with the laity and explaining carefully, clearly and fully what it all means? And how can such work be done without the county society? How can it be done without medical organization, strong, friendly, earnest co-operation amongst medical men through the medium of their county society? How many ordinary voting citizens realize that when they get typhoid fever it is because they have taken into themselves, through the mouth, something from the feces or the urine of some other person, one who had the disease? And typhoid fever is, as we know, a preventable disease. Yet the people do not know it and they continue to alow themselves to become infected with this filthy disease, to allow their water supplies to become infected, to allow dirty dairies to deliver typhoid-infected milk at the door, simply because they have not been informed of these things by those who should inform them—our medical societies. It is a disgrace to you and me; a disgrace to every member of the medical profession the world over, that such things continue to be. And it is because we have not fulfilled our duty to each other and to our charge. The result can be secured only through organization. Only through the active co-operation of all physicians. It can never be secured while we devote any portion of our time to belittling or slandering our brother physicians and by keeping away from county society work.

OUR REAL INFLUENCE.

The potential power of our profession is enormous; our power for good is almost unlimited, if we will but use it. Let us but take that interest in politics—"the science and art of government"—which we really owe to the body politic as citizens as well as members of a learned profession, and politics will be improved thereby. But let us not allow politics to touch and smirch medicine. We, by bringing our special and particular knowledge of things sanitary into the lawmaking body, can do great good to the people and for the people. They need it; they are coming to the point when they will demand it. Shall we wait for that demand or shall we drop the mantle of secrecy which has robed us, to our detriment, and begin right now to educate the people and to tell them what they should know and assist them in sending to the legislature men of a stamp that will carry out the wishes of an enlightened people? The science and art of government should be aided as much by the members of our profession, whose study and work is the physical welfare of the citizen, as by the legal profession whose work is the guarding of the material welfare of the rights and property of the citizen. Is not this a proper duty of an organized medical profession, and is it not therefore a strong reason for better, firmer, more active organization? Is not the responsibility for shirking it to be placed directly upon us? Disaster will result if the attempt at any time should prove successful and our Board of Medical Examiners should be dragged within smirching distance of the political machine. How could such a disaster occur if the people realized the protection to themselves that an upright, honest and conscientious administration of that medical law, with no shadow of political influence distorting its operations, extended? Is not there here some added reason for medical organization? The article on a practical examination in anatomy, appearing in this issue, shows most conclusively the need for such an examining board. Anatomy is the very foundation-stone of all systems of treating the sick. Would you want a sick cur to be treated by one whose knowledge of anatomy was such as to permit him to think the heart larger than the liver and the two transposed within the body? Those ignorant ones who are rejected, of course make a howl, and they attract the sympathy of many laymen who know nothing of the actual facts. But if you are doing your full duty, and your society is doing its full duty, it will be but a short time until every layman knows the facts and is a staunch supporter of a law that protects him from such deplorable ignorance. Then the sore-head may howl as much as he pleases. Is this not a part of our work and a reason for the existence of medical organization?

OUR OWN BENEFIT.

Nor are we without benefit ourselves, material and financial benefit from all this work. We have had practical demonstration of what organized effort will do in the matter of fees for insurance examinations. We shall, when we have a solid and thoroughly organized profession, devoting no small portion of its time to showing the people what they should know, see another and greater victory. Decent fees are essential to comfortable living and scientific upkeep. A poorly supported doctor is a dangerous doctor, for he lapses ignorant, no matter how well informed he may have been when he started in. If he has not the income to buy books and subscribe to journals, to attend county and state and national medical society meetings, to travel occasionally and see what others are doing and achieving, he can not give to his patients assistance as good as it ought to be—the patients suffer for their own niggardliness. Let them understand this, and they are cheerful in the payment of their bills. Let them clearly see that they really suffer from the "ten cents a visit" sort of treatment—from the lodge curse—from the "dollar a month" contract doctor, and these evils will disappear. When a man is sick he wants to know that he is getting the best consideration of his case and that he will get the best up-to-date treatment. If he once understands that on the "ten cents a visit" sort of bargain-day treatment he gets mighty little consideration and the easiest sort of treatment that can be doled out, then he will get on to himself and depart from that which does him little good—or does him good and plenty, whichever way you choose to look at it. Then, too, think of the tremendous value of a strong medical organization protecting its members from blackmail in the

guise of malpractice suits. Not one malpractice suit in a thousand is based on a legitimate case of rankly poor, bad medical treatment. They are bred of jealousy, hatred and malice; and somewhere, skulking behind the plaintiff, you will find some hound of a doctor trying to get even for some supposed wrong, or enviously trying to injure a brother practitioner. Get together. Get into your county society and be active therein. Find out what the other fellow really is and you will generally find that he's a whole lot better than you thought. Stand together in your medical organization and work for each other and you'll soon find that you are really working for your own self and your own betterment, mental and financial.

A WORD OF EXPLANATION.

In compiling the data for the Register this year, a very large number of errors were found and corrected. Some were not found and one or two which were found, through the malignancy of some obscure fate, did not get corrected. You must remember, however, that it is a mighty hard thing to eliminate errors that have once crept in, and a good many got in in 1906 when we tried to re-establish the necessary information after the fire. Even now we occasionally come across some physician who has been licensed in this state, and yet of that fact we have no record. Such a case occurred the last week in August, just after the new Register was off the press. The Index this year is full of errors. It was carefully prepared and corrected in this office, but the copy which we prepared was not used; the publisher, thinking to gain time, presumably, made him an index and used that. The result is most annoying but can not be helped for another year. You can help us a great deal if you will look over the book—particularly the "address unknown"—and advise us of any corrections known to you. It is doubtful if a directory (or any other book, for that matter) will ever be printed free from errors, but if you will all help with your information, we will make the book a good deal more accurate than could possibly be the case otherwise.

VERY SAD COMMENTORY.

A good many of the Eastern journals are printing editorials warning their readers that the Fall season is approaching and with its advent the usual epidemics of typhoid fever are to be expected and looked out for. This is a sad commentary on our neglect of duty. Did the people know as much about the nature of typhoid fever and the manner of its conveyance as they should, as we should long ago have told them, there would be astonishingly less of this disease in existence and warnings would not be required. To think of the manner of conveying the disease, is sickeningly disgusting even to a physician; how much more so to one not accustomed to see daily the diseased side of life! We certainly have urgent need of some sort of a department of public health, or a sanitary army, to take charge of many things that come intimately into our lives when the subject of health or disease is considered. There is urgent need, also, of educating the public to an understanding of that need and what it all means. Such education can come only from our profession, in the first instance, no matter how its dissemination may be secured. Recently the Committee of One Hundred of the A. A. A. S. has taken vigorous hold of this matter and is prosecuting the work of public education as strongly as possible. But no committee can do it all. Each county medical society, if it will, can do more in its own territory to help this so much to be desired work along, than could a hundred committees of a hundred.

WHAT ARE YOU DOING?

"What are you doing for the world?" Did you ever seriously ask yourself the question? Are you really doing anything, or are you living an absolutely selfish existence, thinking only of your own life and your own fortunes, practicing your profession for the revenue there is in it, and thinking nothing of your real duty to the rest of humanity? Your profession is an altruistic one; are you personally imbued with any of this spirit of altruism? Have you set yourself any task to be performed for the betterment of humanity or of any class of it, unselfishly, thoughtfully, untiringly? If not, is not your life an empty one? Can one live a life wholly to and for himself, with no life object other than the getting or the accumulating of money, and not miss the most elevating stimulus and the most gratifying sensation possible? Take thought to yourself and to the great problems of life interest that you may see upon every hand; the many undertakings beckoning to you from every side. Where is your interest? Have you one, or are you a mere grubber, destined to go down to the grave without having left the slightest mark upon your time or your people? Do you even make the definite and distinct effort to keep your mind as well stocked as it should be in order that you may give the best there is to those you treat and from whom you derive your support? How can you possibly do this if you hold aloof from your fellows and do not meet, for the purpose of exchanging ideas and of helpful study, your fellows who are also in this hardest of all professions? It is impossible for a single man to work alone, systematically and persistently; he needs association and the stimulus that comes from it. Can you get this if you do not make the effort to meet with your kind? You can not, and you know it. Your study will be desultory in the extreme and, in due time, will cease entirely if you have not the spur of association with those similarly studying. Do not think that you can get along without your county medical society. You can not and be the doctor that you should be; you can not and give your patients the degree of understanding they should receive.

DRUG HABITS.

Everywhere, at the present time, the movement is on foot to erect barriers to prevent the sale to the laity of habit-forming drugs. In our own state the Board of Pharmacy has been very active in arresting and prosecuting pharmacists who have violated the law and sold habit-forming drugs to people without a physician's prescription. They have done splendid work and in almost every instance they have secured convictions. It is good work and should receive our most hearty support and commendation. But the board is handicapped by two things. One is the refilling of prescriptions, to prevent which there is, at the present time, no law. The other is a condition humiliating to mention; it is the existence of a certain few most despicable physicians who make it a business to write prescriptions for dope fiends. Fortunately, there are not many such, but there are a few and in some sections they work havoc with the honest efforts of the Pharmacy Board to stamp out the sale of drugs of this class. Is there not some way in which these vilest of human beings, who betray their trust and wreck human lives where they have undertaken to save them, can be reached? It would seem as though there ought to be some way of getting at these fiends and putting a stop to the criminal debauch of their profession—and ours. They bring contempt upon us all, and ignominy upon our profession. We can certainly aid the board in passing a law preventing the indiscriminate refilling of prescriptions, but is there nothing that we can do to purge our profession of these dastardly disgraces to it? Any suggestions will be more than welcome.

WHAT IS A PRACTICAL EXAMINATION IN ANATOMY?

By DAIN L. TASKER, D. O., Los Angeles.

We often hear the remark, made by those who are expecting to take the examination of the State Board, that if the examinations were practical they would have no difficulty in passing. That word "practical" is a hard word to define. "Practical Medicine" is a phrase frequently used by men of all schools. It is needless to note that what is considered practical medicine by one medical sect receives scant valuation by another.

Probably each examiner tries according to his understanding to give a practical examination. The examinations in anatomy have been evolved after much thought. The results of these examinations furnish some interesting facts for the consideration of the profession at large. Since it is not necessary to argue that a physician should be acquainted with the structure of the body I will merely analyze some of the results of the test given August 4th of this year.

Anatomy as given us in elaborate description by Gray, Morris, Gerrish, and others, leaves us surfeited with details of word analysis but usually without practice in coordinating series of facts, therefore our knowledge of this important subject slips from us under the attack of new subjects usually classed as "practical."

Since our board is non-sectarian and has no duty to perform in the matter of catechising the applicants as to medical theories, questions should be made to touch the common understanding of fundamental subjects at their most important points. It is easy enough to state this proposition but difficult to put it into practice.

Every practitioner is likely to meet cases of internal or external hydrocephalus, meningitis, or other conditions calling for some knowledge of the meninges and the spaces containing cerebro-spinal fluid. It seemed that the question, "Describe the subarachnoid space and its connection with the ventricles," would serve to bring out those larger facts which ought always to be remembered. Many of the answers were very surprising. The general average of the 140 applicants on this question was 6.4+. Since I do not know who wrote the answers I quote some of them here on account of the general interest they may arouse in the subject of better teaching of anatomy in our colleges. Out of the great wealth of more or less profound misconceptions furnished me in the answers, the following eight are good examples:

1. "It bears direct relation to ventricles via velum interpositum which is a prolongation of the choroid plexus—spinal fluid being drained and passing thence through subarachnoid space in direct communication with spinal cord thence down spinal canal."

2. "Subarachnoid space is that space lying beneath the subarachnoid membrane and above the pia mater and contains the blood vessels and lymphatics which go to supply the brain substance, also the cerebro-spinal fluid circulating here can easily diffuse through the pia mater into the ventricles of the brain thereby causing an equilibrium of the hemispheres of the brain within the skull. The cerebro-spinal fluid is obtained from the diffusion from the vessels and lymphatics, which when the subarachnoid space is emptied of fluid by lumbar puncture it immediately refills from the vessels."

3. "Subarachnoid space lies at the base of and between the hemispheres of the brain and opens into the ventricles."

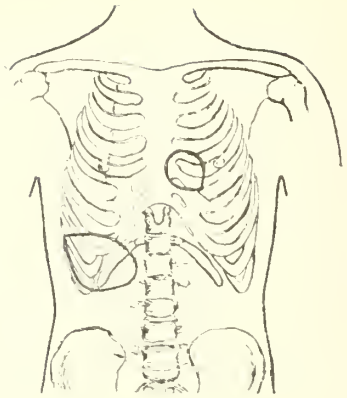
4. "The subarachnoid space is the space occupied by the longitudinal sinus and which dips between the ventricles allowing the blood more room in the sinus."

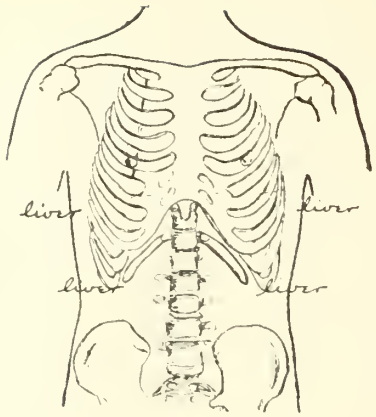
5. "The central canal of the cord is the remains of the neural canal of the germinal vesicle.

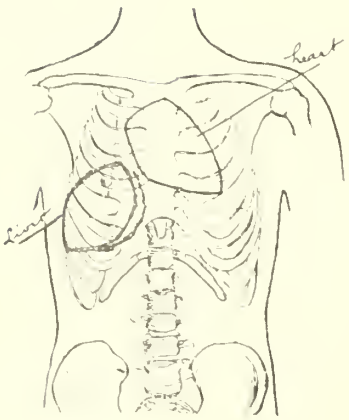
"Forms a direct communication through the entire length of the cord and the fourth ventricle which is an expanded portion of the canal. The two lateral ventricles communicate with the fourth by the third ventricle. The canal terminates in the cauda equina of the cord where it connects with the subarachnoid space."

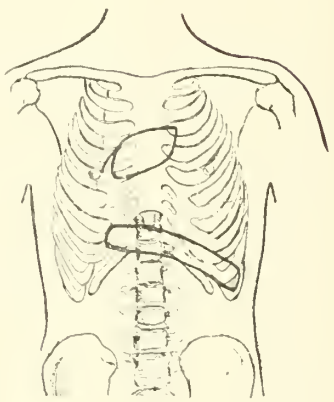
6. "The subarachnoid space lies between the closely investing pia mater membrane and the thinly spread arachnoid. The communication is through the central canal of the cord up through third and fourth ventricles and two lateral ventricles."

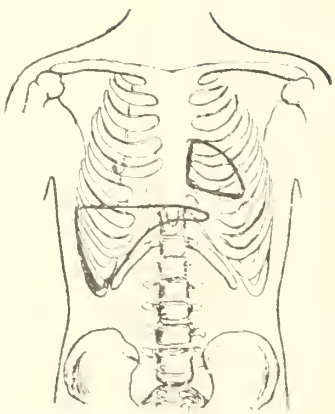
7. "Subarachnoid space is the interval between

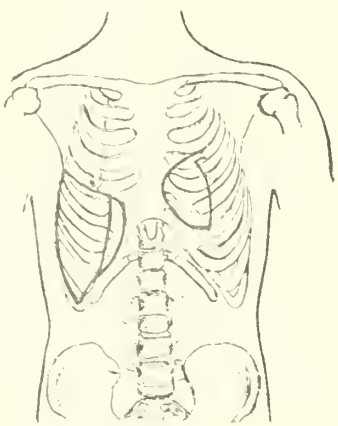


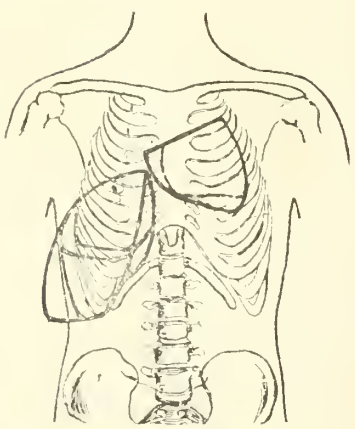

liver
liver
liver
liver

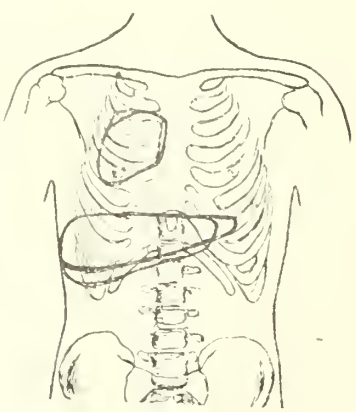

heart
heart

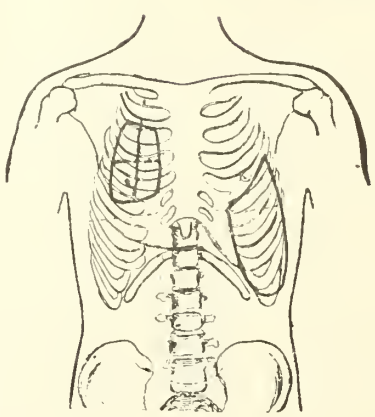












the arachnoid and pia mater of the meninges covering the brain. Is connected with the ventricles by the lymphatic vessels and veins of Galen."

8. "The subarachnoid space is formed by the dipping down of the arachnoid membrane forming spaces connecting the cerebral and cerebro-spinal centers containing the cerebro-spinal fluid, thus allowing a free movement of the fluid."

The second question was designed to bring out some points in osteology. Accidents involving injury to the head are so numerous that it seemed hardly probable that any would fail to recall rotundity, diploic tissue and differing character of outer and inner tables, numerous bones with sutures varying in arrangement, also buttressing and groining as being conditions tending to minimize possibility of injury to the brain. The general average was 6.7+. Very many failed to give more than two or three points.

The third question, "Describe the external jugular vein," seemed to be a shock because the general average reached only 6.1+. This vein was selected for description on account of its diagnostic value in lesions of the right side of the heart. A question of this character may be considered to call for five divisions worth two points each, i. e., point of origin, and area drained; termination; line on surface indicating its course; whether deep or superficial, and valves.

It is surprising that so few answers made any mention of clinical observations of the incompetency of the lower set of valves and the consequent pulsation noticeable in lesion of the tricuspid valves. A few of the answers cannot fail to amuse and at the same time deepen our conviction that the practical facts of anatomy ofttimes elude us:

"The external jugular vein is formed by means of the lateral and straight sinuses and empties into the subclavian."

"The external jugular vein collects the blood from the brain and parts of the head. It extends from the jugular foramen at the base of the skull to junction with the innominate vein. In the neck it runs from the angle of the jaw to the middle of the clavicle."

"The external jugular vein extends from the junction of the external cerebral veins at the level of a line backward from the inferior maxillary to mastoid process, to the superior vina cava, into which it empties.

"It has in its course its own valves (vaso vasorum)."

"The external jugular vein is one of the largest vascular structures of its character in the body the blood pulsating in this vein as it does in an artery and in its essential structures histologically it possesses many of the characteristics of an artery. Hence there has been some dispute as to whether it should be classed as an artery or not."

The diagnostic value of the gross movements of the upper extremity was chosen as a vehicle for bringing out the main facts concerning the distribution of the branches of the brachial plexus. No particular value would attach to memorizing the forty muscles in the fore-arm and hand but there is much value in being able to recognize peripheral paralyses of individual nerve divisions of a plexus by testing the action or non-action of the groups of muscles enervated by them. The question asked was, "What nerve governs (a) extension of the fore-arm, (b) flexion of the fore-arm, (c) flexion of the wrist and fingers, (d) pronation of the hand, (e) supination of the hand, (f) abduction and adduction of the fingers?"

The general average was 6.2+. This is surprisingly good when compared with the lower average on the preceding question.

For the fifth question seven bony points were selected because they serve in some degree as engineer's stakes from which to get one's bearings. The muscles attached to these points are large and important. The question was stated as follows: "What muscles are attached to (a) lesser trochanter of the femur, (b) coracoid process of the scapula, (c) pisiform bone, (d) head of the fibula, (e) lower angle of the scapula, (f) tubercle on the upper border of the first rib, (g) anterior inferior spine of the ilium?" Of the numerous answers worthy a smile two are here given:

1. "To lesser trochanter of femur—adductors and flexors of thigh.

"To corocoid process of scapula—serratus magnus."

"To pisiform bone—

"To head of fibula—tibialis anticus."

"To lower angle of scapula—pectoralis."

"To tubercle upper border of first rib—pectoralis minor."

"To anterior inferior spine of illium—gluteus minimus, maximus and medius."

2. "(a) To lesser trochanter of femur—the five great muscles (by aponeurosis or flat tendon) that constitute the calf of the leg.

(b) To corocoid process of the scapula—is the detoid muscle.

(c) To pisiforme bone—Flexor Longus Digitorum.

(d) To head of fibula—Pronator radialis anticus.

(e) To lower angle of scapula—Pectoralis major and minor by tendinous aponeurosis.

(f) To tubercle on upper border of first rib—a tendinous aponeurosis of the pectoralis major and cervicalis major.

(g) To anterior inferior spine of ilium—By aponeurosis of the sartorius which produces partial flexion and crossing of the leg when in use."

It is hard to conceive of any greater distortion of the human frame than is here pictured by putting the pectorals on the back, the glutei in front and the calf muscles in the thigh, not to mention the other less startling deformities. The general average on this question is 5.9+.

The sixth question relates to the practical working knowledge required in diagnosis of injuries of the pelvis and the hip joint. As usual the question is divided into five parts so as to enable the applicant to secure a passing grade. It has been my

experience in several years of examination work that it is bad policy to ask a student to "describe." Under this general term of indefinite meaning the examiner is compelled to sift pages of words for a few concealed ideas. The question was "(a) What bony points on the posterior surface of the pelvis are at the level of the center of the sacro-iliac symphysis? (b) Between what bony points should measurements be taken to determine the length of the lower extremities? (c) What vertebral spine marks the lower limit of the membranes of the spinal cord and the cerebro-spinal fluid? (d) Between what bony points should a line be drawn to determine the normal position of the great trochanter of the femur? (e) What point on the thigh lies directly over the anterior surface of the capsule of the hip joint?"

This sixth composite question brought an average of 5.4+, the lowest in the list. Legs were measured from all sorts of uncertain points along the crest of the ilium, the great trochanter of the femur, the symphysis pubis, the umbilicus and the episternal notch to the heel, both malleoli and the great toe.

One answer to (a) was, "The lesser wings of the Pelvis."

As an example of descriptive power the following answer to (b) is given: "The Great Trochanter on the outer surface and the outer and lower border of the calcaneum. The inner the ischio sacral to the inner and lower border of the calcaneum in the middle of the posterior half."

Question seven, "What relation have the external and internal abdominal rings and the femoral ring to Poupart's ligament? (b) What are the boundaries of Hesselbach's triangle?" seems so much in line with general experience of all sorts and conditions of medical men that none should fail to answer it correctly. The latter section of the question seemed not to be any more difficult to answer than section (a). Witness these surprising answers:

1. "The external abdominal ring is situated just below the inner one-third of Poupart's ligament. The internal abdominal ring is superior to Poupart's ligament by one and one-half to two inches and lies internally to it. The femoral ring is directly behind Poupart's ligament and about its center."

2. "The internal abdominal ring lies internal to, behind and above Poupart's ligament. The external abdominal ring lies below, and just internal to Poupart's ligament. The femoral ring is above Poupart's ligament."

3. "The external abdominal ring lies below and external to Poupart's ligament. Internal ring lies below and internal to Poupart's ligament. The femoral ring lies below and external to it."

The general average secured was 7.7+.

Minor surgical operations of the hand are likely to be a part of any practitioner's work. Knowledge of the approximate position of the palmar arches should be remembered. The eighth question was, "Give the surface markings of the superficial and deep palmar arches and tell what arteries form them."

There are very few masterly answers to this question. A large number were so tangled in terminology that much time was consumed in deciphering the meaning. Here are some samples of various types of answers:

1. "The superficial palmar arch is outlined by the tuberosity of the radius and the pisiforme bone. The deep palmar arch lies deeper and a little below the superficial.

"The superficial arch is made up from a branch of the radial and a continuation of the ulnar. The deep arch is made up from the terminal of the radius and a branch of the ulnar."

2. "The junction of two lines drawn when the hand is perfectly in a supine position with all the digits in extension and in perfect apposition to each other. The one line drawn from the center of the prominence of bone at the wrist joint and the Phalangeal Metatarsal joint inner surface first digit and the second line from the outer prominence of the radius and the fourth Metatarsal Phalangeal articulation will disclose correct location of the arches beneath the junction of these two lines."

3. "Surface markings bear relation to the tendons from below upward."

General average 7+.

In previous examinations I asked for surface outlines of the liver, spleen and kidneys. It was unbelievable that anyone who had even a smattering of medical knowledge would place these important organs so far from their true positions as did some of the descriptions furnished me.

With the memory of these past experiences I decided to devise a plan of examining whereby the candidate could use his practical knowledge instead of perhaps losing his bearings in descriptive terminology. To this end a rubber stamp was made of an outline cut used for clinical record. The candidate was asked to outline the heart and liver on this cut. You will note the position of the nipple and the attachment of the diaphragm are indicated as guides.

Out of a large number of distortions I have selected nine answers for ocular demonstration to the profession that there is something radically wrong in the teaching of anatomy and that the most practical questions in the whole examination bring forth absolutely staggering answers.

If these outlines represent in any degree the candidates' ideas of the position of normal hearts and livers, what sort of treatment would be administered to the luckless patient, possessed of actually normal organs, who might consult these candidates?

The general averages in questions 9 and 10 were 7.8+ in each.

The general average for the ten questions was 64%. Of the 140 candidates 27 were below 60%, 62 were between 60% and 75%, 51 were above 75%.

Let me refer again in closing to the fact that the examination in anatomy seems to demonstrate a profound need of a Board of Examiners. If men cannot carry in mind during the busy hours of practice true conceptions of the simplest normal anatomical relations how can we expect to build rational practical medicine?

PROGNOSIS AND TREATMENT OF TUBERCULOUS LARYNGITIS: AN ANALYSIS OF SIXTY-ONE CASES.*

F. M. POTTENGER, A. M., M. D., Monrovia.

Until recent years, tuberculosis of the larynx has been classed along with tuberculosis of the bowels as the most unfavorable complication which can arise in the course of pulmonary tuberculosis. In fact, it has been and still is considered by most observers as fatal. The writer has heard many able laryngologists say that they never saw a case recover.

In face of such hopelessness, an optimistic contribution on the subject should be welcomed. Yet I am aware that doubt may arise in the minds of some of my hearers. Nevertheless, I shall not allow this to deter me from maintaing that tuberculosis of the larynx is not a hopeless condition, but one which has failed to yield to treatment because it has been diagnosed too late, and because when diagnosed, it has been treated wrongly.

My experience in the treatment of this condition, leads me to say that the prognosis in tuberculosis of the larynx is little, if any more grave than that of tuberculosis of the lungs.

The prognosis depends upon: First, the extent of the laryngeal lesion; second, the location of the lesion; third, the extent of the accompanying pulmonary condition, and fourth, the manner in which the condition is treated and the length of time such treatment is carried out. As in pulmonary tuberculosis, so here the extent of the lesion is very important. An early diagnosis offers greatly increased chances of cure.

Tuberculosis of the larynx always begins as an infiltration. In its earliest form it is not visible to the naked eye under ordinary conditions, but can be demonstrated by a tuberculin reaction. This early tuberculosis as recognized on inspection after a tuberculin reaction presents the same picture to the eye as the disease usually presents without tuberculin, after it has progressed a little farther. It appears as a slight hyperemia or congestion. The infiltration may remain as such; it may heal out, or it may extend, break down and form an ulcer. I have no doubt that many of these early infiltrations heal out, without having been recognized the same as they do in the lungs, leaving no recognizable symptoms or visible traces behind them.

These early infiltrations, which are none the less tuberculous, although they have not ulcerated, are rarely diagnosed as tuberculous. Many do not cause the patient to consult the laryngoiogist, and often when they are seen, they are treated as chronic catarrhal thickenings, until the patient becomes dissatisfied and stops treatment, or until the infiltration becomes more marked or an ulceration appears showing the true nature of the condition.

The experience of the laryngologist, however, has been almost exclusively confined to the treatment of far advanced conditions, either large infiltrations or more commonly ulcerations. These, while not hopeless, are very difficult to treat, and it is not surprising when we consider the disadvantages under which these cases have been handled and the measures that have been employed in their treatment, that they have shown so little encouragement to those who have attempted to treat them.

While the great majority of infiltrations can be apparently cured and even the severe ulcerations will yield to treatment in a fair proportion of cases, especially when the disease is in the early stage or in an inactive condition, when the pulmonary condition is far advanced and active, alleviation is all that can be hoped for, and the occasional healing that does take place is the exception.

During the two years between January 1, 1906, and January 1, 1908, in the Pottenger Sanatorium for Diseases of the Lungs and Throat, there were two hundred and eight patients who remained three months or more, and of these there were sixty-one, 29.3 per cent, who showed sufficient involvement of the larynx to cause symptoms, or to allow the diagnosis to be made upon laryngoscopic examination. This does not include many cases of slight infiltration revealed by local tuberculin reactions.

In order to illustrate the effect of the various factors mentioned above upon prognosis, I have arranged the following tables:

Table I shows the difference in prognosis according to the extent of the lesion. Whereas, 96 per cent of slight and moderately extensive infiltrations with ulcerations were apparently cured, only 16.67 per cent of the severe infiltrations with ulcerations were apparently cured.

TABLE I.

Showing difference in prognosis of tuberculous laryngitis according to the extent of the lesion.

Extent of Lesion.	No.	Appar'ly cured.		Arrested.		Improved.		Unimproved.	
		No.	%	No.	%	No.	%	No.	%
Slight and moderate infiltration	25	24	96	1	4				
Severe infiltration without ulceration	6	3	50			3	50		
Severe infiltration with ulceration	30	5	16.67	1	3.33	19	63.33	5	16.67

The prognosis also depends very much upon the location of the lesion. The portions of the larynx which are best supplied with lymph and blood, yield the most readily, because the protective bodies which are elaborated by the body cells can be applied more directly. Therefore, a lesion in the interarytenoid space yields much better than one involving the cords or the epiglottis.

The extent of the pulmonary lesions is of great prognostic importance. A slight or moderate infiltration will nearly always heal out in a patient in whom the disease has not seriously undermined the general constitution, while if the pulmonary condition is rapidly advancing and the general strength of the patient is failing, then more than an improve-

*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

ment on the part of the larynx must not be expected.

A severe infiltration or an ulceration offers a very fair prognosis in cases with slight pulmonary involvement, or in those cases with more extensive involvement, but where the disease is inactive and the general condition good; providing, in case of ulceration, the ulcer is so situated as not to cause dysphagia and interfere with nutrition. In many cases with advanced pulmonary trouble, the larynx will heal out although the lungs do not. In rapidly progressive pulmonary cases, the prognosis in laryngeal complications is bad and little can be hoped for through treatment, beyond the relief of the most pronounced symptoms.

TABLE II.

Showing difference in prognosis of tuberculous laryngitis according to the location of the lesion.

Location of Lesion.	No.	Appar'ly cured.		Arrested.		Improved.		Unimproved.	
		No.	%	No.	%	No.	%	No.	%
Interarytenoid space	10	10	100						
Int. space and arytenoids	13	13	100						
Int. space—aryt. and cords	22	6	27.27	1	4.55	14	63.18	1	4.55
Int. space—aryt. and ventricles	1	1	100						
Int. space—aryt. —cords and ventricles	8	1	12.5	1	12.5	5	62.5	1	12.5
Int. space—aryt. cords—ventricles and epiglottis	7	1	14.27			3	42.82	3	12.82

In my cases, the results classified according to stage and activity of the disease are shown in Table III:

TABLE III.

Showing the results obtained in laryngeal complications according to the pulmonary condition.

Slight and Moderate Infiltrations.

Stage.	No.	Appar'ly cured.		Arrested.		Improved.		Unimproved.	
		No.	%	No.	%	No.	%	No.	%
1st									
2nd Inactive									
2nd Active	1	1	100						
3rd Inactive	14	14	100						
3rd Active	10	9	90	1	10				

Severe Infiltration Without Ulceration.

1st									
2nd Inactive									
2nd Active									
3rd Inactive	2	1	50			1	50		
3rd Active	4	2	50			2	50		

Infiltration With Ulceration.

1st									
2nd Inactive									
2nd Active									
3rd Inactive	4	2	50			2	50		
3rd Active	26	3	11.53	1	3.8	17	65.38	5	19.23
	61	32	52.45	2	3.27	22	36.03	5	8.1

We now come to the most important factor in prognosis—the manner in which the disease is treated. It must be borne in mind that tuberculosis of the larynx is perhaps always secondary; and, in nearly all instances, secondary to tuberculosis of the lungs; so it cannot be treated as a special entity, but must be treated along with the primary focus. No treatment of tuberculosis of the larynx can be considered that does not comprehend this broader idea.

I wish to offer a few suggestions regarding the diagnosis of tuberculosis of the larynx, for an early diagnosis of this condition is essential to successful treatment. Much of the failure on the part of the laryngologist is due to the fact that the disease has been treated only in its advanced stage of severe infiltration or ulceration.

Remembering that tuberculosis begins as an infiltration, and that this infiltration often exists for months without ulceration supervening, we should look upon all infiltrations of the larynx which do not yield to treatment after a reasonable time as suspicious. All such should call for a thorough skilful examination of the chest; and if it be found that a pulmonary lesion exists, then it is imperative that the exact nature of the laryngeal lesion be determined.

While I recognize very well that infiltrations occurring in the larynx during the course of pulmonary tuberculosis are not necessarily of a tuberculous nature, yet I also realize that these conditions are tuberculous more often than is generally believed, and I am positive that when they are present, it is imperative that a definite diagnosis be made.

Clinical experience shows that careful examination of the larynx of patients suffering from advanced pulmonary tuberculosis, reveals a lesion in about fifty per cent of cases; therefore, the seriousness of such infiltration is evident.

The skilled laryngologist who has the opportunity to examine the throats of many tuberculous patients will soon learn to make a diagnosis. For those who do not have this opportunity I would suggest the use of the tuberculin test. The larynx is an ideal location in which to observe the action of tuberculin. If the laryngeal lesion is tuberculous, a reaction will show after the tuberculin has been administered. When tuberculin is administered it causes a local reaction in tuberculous tissue, which can be detected before a general reaction with temperature appears. This manifests itself as a slight blush with a small dose, and may even appear as a slight congestion after a larger one. This usually appears from eight to twenty-four hours after a dose of old tuberculin has been administered, and passes off in from a few hours to a day or two thereafter. This diagnosis in laryngeal cases can usually be made with smaller doses than those commonly advised for making the tuberculin test. The usual method consists in administering 1, 2, 3, 5, 7, and 10 mgs., preferably at night, with one day intervening between the doses up to 5, and then about three days between 5 and 7, and 7 and 10. The larynx should be carefully examined at frequent intervals on the day following the injection. The larger doses will rarely be required. In fact, I have observed laryngeal reactions to follow minute doses of tubercle vaccines.

More important than the earliness of the diagnosis, the location of the lesion, and the character of the accompanying pulmonary condition, is the manner in which the lesion is treated. I wish at the beginning of this discussion to emphasize the fact that tuberculosis of the larynx cannot be cured

by local applications. Local applications may help to keep the parts clean and to relieve cough and pain, but we cannot conceive of them directly and favorably influencing the healing of the lesion, except as they cause a hyperaemia, thus facilitating the direct application of the curative agents found in the blood and lymph to the focus of disease.

Tuberculosis is an infectious disease. Its cure is brought about by the establishment of immunity. The body cells, stimulated by the toxins elaborated by the tubercle bacillus, are put upon the defensive and respond by the formation of protective substances, which neutralize the toxins and destroy the bacilli. In this manner, and this alone, is a cure brought about. It matters not where the lesion is located, whether in the lungs, the larynx, the glands, the kidneys, or the bones, the disease has the same cause and same pathology, and its cure is established in the same manner.

The general treatment of tuberculosis of the larynx, then, is the same as that of tuberculosis elsewhere, and only differs in as far as those symptoms which arise from the particular location of the lesions are concerned. There are three factors in the cure of tuberculosis:

First, the ability of the cells to respond and form protective substances;

Second, the stimulant which excites the cells to form protective substances; and,

Third, application of the protective substances to the focus of infection.

These principles apply just the same to tuberculosis of the larynx as they do to tuberculosis elsewhere.

The body cells must be kept healthy in order to be able to furnish the best response. Therefore, such measures as open air, carefully regulated rest and exercise, proper food, hydrotherapy, climatic change, and suitable tonics must be carefully employed.

The stimulant which naturally excites the cells to formation of protective substances, is furnished by toxins which are given off from the tubercle bacillus at the seat of infection. For some reason, in tuberculosis, this stimulant often fails, just why we do not exactly know; but it has been found that the toxins made from the tubercle bacillus (tubercle bacillus vaccines) can be introduced artificially into the body and produce the necessary stimulation. Since this stimulation is necessary in order to cause the cells to respond, the employment of specific vaccines becomes a very important part of treatment.

I wish to emphasize what must now be clear to all: that in the employment of vaccines, no new toxin is being employed; use is simply being made of the one which nature uses and without which the cells will fail to be stimulated to the production of anti-bodies.

The method of employing tuberculin and other specific vaccines in tuberculosis of the larynx is very simple. The initial dose should be small. The day following, the larynx should be examined. If there is no reaction (which shows as a slight hyperemia or congestion, according to its severity) present, then, that day or the next a larger dose may be given. This should be increased until a local reaction occurs. Then another dose should not be given until all signs of reaction have disappeared; neither should the quantity of vaccine be increased until the last dose has failed to produce a reaction. Given in this way, the dosage is absolutely under the control of the physician. Personally, I have learned more of the use and local action of tuberculin and have had my faith in its curative powers strengthened more by watching its effects in the larynx than by any other phenomenon associated with its administration.

The third factor is the application of the protective bodies, when formed, to the seat of the infection. In tuberculosis the areas of the disease are peculiarly shut off from the circulation, the foci being surrounded by a stagnation of the body fluids. Careful studies have shown that the fluids which are in contact with these foci are very poor in protective substances, owing to the fact that the fluids change so slowly that the antibodies are all used up in combating the infection. It is essential then, if possible, to hasten the circulation through the diseased parts and increase the amount of blood in them, and this can be done by such measures as the application of the sun's rays after the plan of Sorgo, whereby the patient treats his own throat by using a laryngeal mirror and focusing the sunlight, reflected by a mirror, upon the larynx; or by direct application of blue light taken from the sun's rays and reflected from large mirrors upon the larynx externally. In this connection, I would like to call attention to the hyperemia in tuberculous areas caused by the local tuberculin reaction. The value of this hyperemia produced by tuberculin has not been fully appreciated. Theoretically, such a line of treatment is an ideal one and should result in a cure in all instances, but there are many difficulties to overcome, the principal ones of which, as I see them, are:

First, the cutting off of the blood supply and the tendency to necrosis on the part of the tuberculous tissue; and,

Second, the stagnation of the body fluids in the neighborhood of the tubercles. These prevent the direct and complete application of the curative substances to the seat of infection and cause the cure to be produced at a great disadvantage.

Aside from the above curative measures there are others of value, such as rest and cleanliness. Local applications will not cure the disease, but they will relieve distressing symptoms, and in this manner give comfort. They should not be severe in their action. With my conception of the pathology and therapy of this affection, I can see no place for the employment of such remedies as lactic acid, and in practice I have never found them necessary. Bland applications, such as protargol, 5-10%; and argyrol, 10-25%, have given me good service.

I wish also to mention operative procedures, that I may protest against their employment. They were originally suggested because it was thought that the knife would remove the focus of the disease; but with greater knowledge of tuberculosis we know that this is impossible; the result of operation has proven anything but satisfactory. Following operation, the wound often heals, but in a very short time it breaks out anew and the patient is really worse off than before, because he has lost tissue and at the same time gained nothing. It is always a dangerous procedure to operate in tuberculous tissue, for the cut ends of the blood vessels are opened and stand ready recipients of bacilli to carry them to new tissue.

If it is the physicians' purpose to attempt to cure tuberculous laryngitis, I can conceive of operative procedures being called for only in the rarest of instances. If, on the other hand, the purpose is simply to palliate or temporize, then I can see how operation might relieve a severe dysphagia and make the patient more comfortable for a time, until ulceration occurs again, which is usually in a short time.

When ulceration has occurred the parts should be kept clean, and, if pain is present, dusting the part with orthoform will often give relief. When cough is severe I add 1-6 gr. of heroin to the orthoform, before dusting it into the larynx. Cold compresses to the throat at night help to relieve cough, thus serving a good purpose.

This simple treatment of tuberculous laryngitis has proven to be very satisfactory. There are other important factors which contribute to its success. First, the laryngeal infection is treated only as an incident connected with the pulmonary lesion; consequently, all the rational measures which aid in the cure of the latter are employed. The second important factor is time. When the patient is being treated for pulmonary tuberculosis he expects to devote from four or five months to one or more years to it, according to the severity of the case, and, consequently, this prolonged treatment affords the laryngeal lesion an opportunity to heal.

In Table IV I have classified my cases according to the result obtained and time of treatment.

TABLE IV.

Showing average length of treatment according to result obtained.

Results.	No. cases.	Average time in months.
Apparent cure	32	10 2-3
Arrested	2	9 1-2
*Improved	22	7
Unimproved	5	3 2-5

* Four of these were treated from three to five months.

In treating these cases in the manner in which it is usually done by the laryngologist, i. e., as a separate disease, I can see no bright future for tuberculous lesions of the larynx; but, by regarding them as a part of a tuberculous lesion elsewhere and treating them as such, offers an opportunity for classifying tuberculous laryngitis as one of the most curable lesions.

From my study and experience in the treatment of tuberculous laryngitis, I offer the following conclusions:

First, when tuberculosis of the larynx is diagnosed early the prognosis is about the same as tuberculosis of the lung when diagnosed early;

Second, chronic thickening in the larynx always calls for a careful expert examination of the lungs, to determine the presence or absence of pulmonary tuberculosis, and if the latter is found to be present, the evidence is strongly in favor of the tuberculous nature of the laryngeal lesion;

Third, local applications will not cure tuberculosis of the larynx. The cure comes through the patient's body fluids.

Fourth, tuberculosis of the larynx is not a separate disease, but a complication, and a rational treatment consists in the treatment of it as a part of a tuberculous process elsewhere, usually of the lungs;

Fifth, tuberculin and the other tubercle vaccines, intelligently administered, are of inestimable value in establishing immunity and bringing about a cure in tuberculous laryngitis.

DISCUSSION.

Dr. W. H. Roberts, Pasadena: This is a very comprehensive paper, as you will see when you read it in full. The salient feature of the paper is that it holds out hope to an apparently hopeless class of patients. I say hopeless because tubercular laryngitis is regarded by laryngologists as almost incurable, and it is for the reason that Dr. Pottenger has stated, that the laryngologist sees them only in the advanced stages, when little or nothing can be done. It is really the general practitioner who should make the early diagnosis in lesions of the larynx as in the lungs. Dr. Pottenger has struck the keynote when he says that tuberculous laryngitis is a part of the tubercular process and we can not cure it in itself without directing attention toward the underlying tuberculosis of the lungs. The doctor has arranged these tables in a very comprehensive and satisfactory manner, and in studying them you will see that a great deal can be done in the early cases, but comparatively little in the late cases. He treats them not as a laryngologist, but as a general practitioner, with tuberculin. There is no better place to observe the reaction of tuberculin than in the larynx, and in his paper he states what has been done and shows how beautifully the reaction takes place. If there is one thing more than another upon which emphasis should be laid in tubercular laryngitis it is in making an early diagnosis, and in applying early treatment, constitutional and local. The only thing we need do locally is to keep the ulcerated area clean, and relieve dysphagia. I think Dr. Pottenger's results are remarkable, in that through the constitutional treatment, by the use of tuberculin hypodermically, he is able to produce such results. It is very seldom that the laryngologist can cure laryngitis of a tubercular nature. I have seen two cases apparently cured, but the patients ultimately succumbed to tuberculosis. But here with early constitutional treatment there is still hope for these patients, and as Pottenger says, the condition is as curable as if in the lungs and the condition in the lungs is the lesion which we must strive to cure.

Dr. C. F. Welty, San Francisco: I hardly know how to get at the subject, having such a few minutes at my disposal. It is so important, and I believe in some of these things very thoroughly, for I have practiced and I have seen practical results from them. You must not too severely criticize my classification of these cases, but I divide them into two

divisions, the active and the passive. By the active I mean where they are running a temperature, losing weight and suffering from malnutrition. Then the passive are those cases not running a temperature, not losing weight and are rather quiescent. These I divide into two classes, the quiet, where they have tubercular lesions of the larynx but they are not running a temperature. They are apparently in good condition. These are the cases I single out for operation, and I operate these cases in the hope of curing them of laryngeal tuberculosis, and I have seen it cured, and I have done it myself. I will follow that up by the statement that I have seen these things cured without operation as well. Then we have the active forms of this passive group. I mean edema of the glottis, ulceration of the true and false vocal cords. They demand operation because of the fact that they can not swallow, can not eat, because of the pain it brings, and can not sleep becuse they cough so much. Yet you take that tissue away and they will eat and sleep comfortably, and I have seen them gain five pounds a week in weight after such an operation. They are not the cases we hope to cure, but you are going to make that patient better for some time to come and make his remaining days comfortable, at least.

In regard to tuberculin, of course I have had only a few of these cases. In one case treated that way by Mr. Smith the reaction was so intense after a very small dose that the patient went on from bad to worse and finally died, and she attributed her bad condition to the tuberculin, which was a mistake, as she was far advanced. I never intended to cure her, simply to make her better. But in that case it was bad for that patient. The previous week she had gained five pounds and seriously thought she was going to get well. I must insist that the pain will keep them from eating and if you can get rid of that they will eat plenty and gain four or five pounds a week.

Dr. K. Pischel, San Francisco: Dr. Pottenger no doubt in his full paper mentions the local treatment, and I just want to point out that while I thoroughly believe with Dr. Pottenger that the general treatment is of the greatest importance, I would not like to miss the local treatment, because I think we can do something for these patients, and that tuberculous laryngitis can be cured while the tuberculous lung is still there, as has been pointed out by Morrizz Schmidt, of Frankfort, fifteen or twenty years ago. He is a reliable observer. For those poor fellows who can not be cured, who have extensive ulcers in the larynx, who can not swallow, we must try to do something. In many cases they are beyond operation, and those cases get considerable relief from injecting emulsion of anesthesin and menthol, or orthoform. Nothing, I think, acts better in my hands. It is really a pleasure to see such a poor fellow eat his meal for the first time with ease.

Dr. W. S. Fowler, Bakersfield: Orthoform, I believe, was first mentioned by some physician on the Hudson. I think it has been very generally used with success, with relief from the painful symptoms. The emulsion is made with the yolk of egg.

Dr. K. Pischel: It is made in different ways. Freudenthal makes an egg emulsion. But I have noticed it gets stale. It must be made very carefully with gum tragacanth and gum arabic, and if it is done very carefully it remains good for weeks and weeks. The druggist has to take extreme care in making the preparation properly.

Dr. Hill Hastings, Los Angeles: It seems to me the question of the cure of tuberculous laryngitis and the results depend on our diagnosis of the trouble. That is to say, a man will diagnose one thing as a catarrhal laryngitis occurring in a tubercular patient, which we all must admit is quite frequent. Another man will say that a laryngitis with more or less infiltration is a tuberculous process. The man that says it is a tubercular process will get a good rate of cure. Those who say it is a simple laryngitis and only class as tuberculous cases of infiltration and ulceration will have a high mortality. The mortality that Dr. Pottenger gives is certainly wonderfully small, and it simply means that laryngologists all over the country are failing to diagnose tuberculous laryngitis if Dr. Pottenger is right. There is not in the statistics I have been able to find anything like as wonderful figures in the cure of tubereulous laryngitis as shown here by Dr. Pottenger. Personally, I have brought case records of fifty-seven cases. I do not mean that I have treated them. I have neither treated them locally nor generally over a sufficient length of time. I have operated on none of them, and I have not given tuberculin, so that therapeutically they have no value. I have simply observed the cases for the last four or five years to note their progress. In these fifty-seven cases that I have been able to follow over a considerable period, with distinct infiltration seen on examination, with the symptoms and signs of tenderness on pressure over the ericoid, only one recovered. This patient was cured without tuberculin. I had nothing to do with the cure. There was left an ill-shaped larynx. The arytenoids and folds were thickened and healed, the white showing scar tissue. The cord, as you will see, was markedly thickened, and the right cord is somewhat thickened, the white showing also. It healed itself. The man went up to a weight of 225 pounds and was cured simply by good food and fresh air. I saw him over two years. This is a typical case that did heal, and I know it is possible for a great many of them to heal, but I do not see how we can expect so wonderful a rate of cure as Dr. Pottenger gives until we are able to diagnose them as accurately as he has.

Here is another case with closing after it, which I meet quite a good deal in my practice, a case with both vocal cords somewhat thickened and reddish, and healing after five months. This case, I believe, is not tubercular laryngitis. If you put that kind of cases down as tubercular you are going to get a big rate of cure, but the average laryngologist does not consider every kind of case where you simply find a catarrhal thickening and irritation of the cords a tubercular laryngitis. If Dr. Pottenger does, on what does he base his diagnosis? You take these cases with tubercular lungs which cough up a great deal of sputum. It is an irritant not only to the larynx but the trachea and bronchi as well, and you will find them in the same condition as the larynx. It is natural to suppose that this irritating substance will cause these catarrhal conditions. Whether we are right in saying it is tubercular or not, I have doubts, and am of the opinion that it is a catarrhal condition produced by the irritation of the sputum. I should like to know by what means we are able to diagnose such cases as tubercular laryngitis, otherwise I am rather inclined to doubt whether they are tubercular laryngitis.

(Dr. Hastings used photographs or cuts to illustrate the cases he referred to.)

Dr. E. W. Fleming, Los Angeles: I did not hear Dr. Pottenger's paper, but I presume he took in tuberculosis of the ear.

Dr. W. H. Roberts: He took in just the larynx.

Dr. Fleming: I desire very much to report a case of tuberculosis of the mastoid, and as I wish it to appear in the transactions of the Society, would it be proper for me to read a report of the case?

Chairman W. H. Roberts: I think it would be, inasmuch as the original subject included the ear.

Dr. Fleming: This case is reported because some of its characteristics are sufficiently unusual to be of noteworthy interest.

Mr. A. T. B., aged 30, consulted me December

10th, 1907, on account of a sensitive and rather large swelling behind the right auricle over the mastoid region. On inquiry he stated that the left submental gland softened and discharged spontaneously three years ago. Operated upon for enlarged cervical gland in 1906 and for tuberculous abscess of liver, June, 1907. No history of previous ear trouble. Family history negative. Patient nervous, thin but not emaciated. Pulse, 120. Temperature, 99° to 100°. No cough or expectoration. The mediastinal glands which were reported to be enlarged in 1907 were found to be enlarged by Dr. Pottenger at this time, who also furnished me with the salient points in the patient's history and present general condition. No ear discharge, drum-heads intact and hearing good. December 14th, under infiltration anesthesia, Dr. Hastings and Dr. Bullard assisting, the mastoid region was freely exposed. The cortex was found to be perforated, through which issued pus. Further investigation revealed extensive carious destruction of the greater part of the mastoid process, without involving the antrum. Most of the mastoid cells external to the antrum were replaced by a mass of tuberculous tissue, while the greater portion of the outer wall of the vertical part of the sigmoid groove was about to separate as a sequestrum. Upon exposing the lateral sinus wall, it was found greatly thickened, very firm and to all appearances in a state of fibrous hyperplasia. As apparently healthy bone was reached without going as deep as the antrum, it was thought best not to expose it, there being no physical evidence or history of an involvement of the middle ear. The antrum not being exposed, the operation fell short of being a typical mastoid operation, although the object sought to be accomplished was the removal of all available foci of disease. Twenty days after the operation the mastoid cavity was completely healed and covered with healthy skin. He then went to the Pottenger Sanatorium at Monrovia, and concerning his treatment there Dr. Pottenger can best tell you. Suffice for me to say that he returned to Tucson about January 25th, 1908, his general condition improved in all respects—apparently well of his tuberculous mastoid. March 5th he returned for further treatment. Examination of the mastoid region at this time revealed beginning softening and breaking down of the scar tissue, associated with a sinus extending from lower end of former vertical incision two inches down the neck. March 9th, the mastoid cavity was again opened, infiltration anesthesia being used as before, and cleared of a mass of tuberculous looking tissue, only to reveal a still further advance of the disease by the involvement of the bone posterior to the sigmoid groove over the posterior fossa, and superiorly carious bone in the form of a large sequestrum resting over the middle fossa. The patient complained at no time of severe pain during the operation, which necessitated the laying bare of the posterior and middle dura adjacent to the mastoid region in order to get well beyond the apparent limit of the softened diseased bone. The mastoid wound up to April 1st, was dressed with balsam of Peru and appeared to be acting favorably, when it was noted that the tubercular process was again active, this time involving the under surface of the bony meatus. A large section of the wound was again opened, the carious bone removed by a Rongeur forceps, and also a mass of unhealthy granulations by curettement. Since the case first came under observation, which was last December, he has, I believe, with the exception of about six weeks, been treated by tuberculin injections by Dr. Pottenger. It should be stated that the involvement of the lungs is not clearly defined. Since April 9th, X-ray exposures in charge of Dr. Soiland has been added to the possible helpful measures to combat the ravages of the disease. At the present time the local condition has the outward appearance of healthy healing. His general condition has also materially improved, having gained four pounds in the last two weeks, yet I am, having in view his previous history, inclined to think the prognosis for ultimate recovery is gloomy.

Dr. F. M. Pottenger: I think I have covered some of the points made by Dr. Hastings. In the first place we know that about 80 or 90 per cent of the human family, perhaps, have tuberculosis lesions. Post mortems show tubercuIous laryngitis in the neighborhood of 75 per cent of cases—according to different observers from 35 to 75 per cent. I believe that where tuberculin is used over 50 per cent will show laryngeal involvement. In regard to the cases that I have reported here, not a single one of them has not shown the tuberculin reaction in the larynx. It is as simple as can be to make the diagnosis. If you have thickening give them a dose of tuberculin and the reaction is readily seen and you cannot be mistaken about it. There is no place where a man can learn so much about the use of tuberculin and about the cure of tuberculosis as by observing the local reaction in the larynx.

I was asked to say a few words about the treatment. My method has always been to first find the proper dosage of tuberculin, beginning with a very small dose that will cause a slight reaction. I observe the larynx daily and do not give another injection until the reaction disappears, and do not increase the dose until it ceases to give a reaction. You have it under your control and you can watch the result. The diagnosis in the cases reported here to-day have all been made in that way. I will say we do have cases of catarrhal thickening due to coughing, but where you do have a chronic thickening in the larynx the diagnosis must be made positive. It is demanded that you know positively. I do not doubt that many cases of tubercular inflammation get well. We know they do. We find them post mortem. We find cases of ulceration that get well without treatment at all. The cure is difficult, and yet it is simple. It is simply the production in the blood and the application of the antibodies to the cure of the disease. If you have a slight involvement, and the nutrition improves the general condition improves, why shouldn't it heal? It does in the lungs, it does in the glands, and why not in the larynx? We find it does. We have been too conservative, I am sure, in the treatment of tuberculous laryngitis. Over three years ago I read a paper before the National Association on the subject, and when I said the prognosis was the same as for tuberculosis in the lung I saw a great many heads shaken in opposition. Last year I made the same statement, and the men shook their heads the other way. When I made the rounds of the sanitaria of Europe I found that the prognosis was good or bad according to whether or not they were using tuberculin. Those using it cured them. Those not using it said they did not take them. It is along scientific lines as understood at present, and when you are using tuberculin in the treatment of tuberculosis you are increasing the antibodies, when using it right. Regarding the case of Dr. Welty, I do not doubt that much harm has been done by the use of tuberculin and will continue to be done, but that is nothing against the remedy if used correctly. You have the whole picture immediately under your view. There is no reason for making a mistake. you can not do harm if you watch carefully and give doses accordingly, because you increase it so gently. If I give a dose to-day and produce a slight reaction I do not increase it until it ceases to produce a reaction. You can not do harm. In regard to operation, it depends on what you are going to do. If you are going to cure the larynx I do not believe we should operate. If you are going to palliate, make the patient more comfortable, I believe it will sometimes do it. I have never yet had to operate, By constant care and watchfulness it has not been necessary.

FURTHER CONSIDERATIONS IN THE TREATMENT OF ANEURISM BY DIRECT, GRADUAL ARTERIAL CLOSURE.

Report of a Second Case of Aneurism of the Abdominal Aorta Treated by that Method.*

By ROBERT T. STRATTON, M. D., Oakland.

I have heretofore advocated in certain cases of aneurism, where more radical surgery was contra-indicated, treatment by direct, gradual arterial closure as having advantages, it seemed to me, over other methods thus far used. In the relief of aneurism of the abdominal aorta, and especially its upper portion, it would seem to have its greatest field of usefulness. In this location, to accomplish more than to fill the sac with a firm, stratified coagulum and at the same time leave patulous the large arteries emanating from the sac, supplying the vital organs, as well as a permanent channel to continue the flow of blood down the main vessel, otherwise, to develop competent anastamotic channels, seems beyond hope even in this day of fearless surgery. This can be effected only by direct, local, circulatory control. It is because my further experience has tended strongly to convince me of the soundness of the position heretofore taken, the subject is again presented.

In my first case treated by this method—one of aneurism of the abdominal aorta—conditions within the sac were found *post mortem* to be progressing satisfactorily; the mistake, however, was made of entirely occluding the artery, believing the constrictor was placed below the celiac axis and that complete closure would the better effect the filling of the sac. Up to the time of entire closure, forty-five hours after operation, the aneurism then being largely filled with coagula, the general condition of the patient was excellent—a fact which serves as a strong indication that at least some of these patients can safely endure the procedure. The further experience of a second case satisfies me that the paramount question, when brought face to face with another such patient, will not be, can direct, gradual arterial closure satisfactorily fill the sac with a proper clot, or will the artery be injured at the seat of constriction,* but rather, can the patient's general vitality withstand the necessary surgical operation? Along the lines of procedure which prevent and reduce shock it would seem that the most important advances would next be made.

Through the courtesy of Dr. W. A. Clark and Dr. D. Crosby, I was recently invited to take charge of the patient herein referred to, who was afflicted with an aneurism of the abdominal aorta.

Case.—September 13, 1907; male, Russian, age 43 years; machinist. Has had abdominal pain for seven years; morphine habitue. Confined to bed last three weeks; stoops or gets in and out of bed with great difficulty. General appearance indicates poor vitality. Is an unfavorable subject for surgical operation; urine normal.

Examination.—The aneurism is pulsating against the abdominal wall over an area 5½ by 8 cm., just above the umbilicus and to the left of the median line. From the base of the ensiform cartilage to the upper border of the aneurism is 8 cm.

Operation.—September 17, 1907. Aneurism largely beneath stomach and pancreas. Part approaching the abdominal wall is its lower portion only; upper border of this drops off at a sharp angle to a lower level, where the aneurism continues upward beneath the diaphragm, with a width of about 6 cm. Gastro-hepatic omentum incised between blood vessels and a finger passed across lesser peritoneal cavity. Hand introduced within abdomen, stomach depressed and aneurism found to extend upward between the crura of the diaphragm to the aortic opening. Difficulty and dangers of separating aorta from attachments in this situation appreciated, but desperate nature of malady seems to justify attempt. Long scarifier, guided by left index finger, tears the peritoneum over right border of aorta and finger separates aorta and is worked beneath it to its median line, where strong fibrous bands attaching it to the spine can not be passed. Similar procedure followed on left side. Central attachment of aorta to spine torn through with much difficulty with a full-curved clamp guided by index finger. Tape on special carrier passed around aorta with difficulty and grasped with a clamp and drawn out. Constrictor* applied over tape and fixed so as to make a just perceptible impression on the aneurismal pulsation. This was at 11:30 a. m.; no special change in the patient's condition accompanied this procedure.

The constrictor had been planned for its application to the aorta where it could be placed vertically, and the tape kept flattened out and smoothly applied to the walls of the vessel. Its application at this site required its being placed at a decided angle to the long axis of the aorta and resulted in a folding of the tape longitudinally, both of which conditions would favor traumatism of the arterial tunics. However, my knowledge of the ability of the aorta to safely withstand considerable violence induced me to proceed, even if not better prepared for the conditions with which I had thus unexpectedly met.

At the conclusion of the operation the patient was in pronounced shock, but reacted slowly. He manifested no special distress from the presence of the instrument. At the expiration of the first twenty-four hours he was doing only fairly well; pulse around 122. Constriction then advanced until there was distinct lessening of the force of aneurismal impulse, with apparent abolition of its expansile quality; at the conclusion of this procedure, which caused no complaint, pulse was 119; femoral pulse continued fairly strong.

Later in the day he began to fail. It was not thought that the presence of the instrument with but a very partial arterial closure effected was a material factor in his decline; nor was it deemed necessary to relax the degree of constriction. He died at 11:35 a. m., September 19th, fifty hours after the first application of the constrictor.

Autopsy.—Left plural cavity contained 180 cc. fluid blood. Small laceration in pleura at the aortic opening in diaphragm, made at operation, accounted for the presence of the blood. Apparently no infection. The bodies of the eleventh and twelfth dorsal vertebrae were deeply eroded.

The celiac axis, the superior mesenteric and both renal arteries were found to have their origin in the sac. Old sclerotic changes had entirely obliterated the lumen of the celiac axis and had largely closed both the superior mesenteric and right renal arteries. The left renal was large and patulous. It was noted

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

* The writer's experiments (Annals of Surgery, August, 1903) made inquiry as to the effect of pressure of about two days' duration on the aorta of dogs; Halsted (Journal A. M. A., December 29, 1906) as the result of later experiments, finds that metallic bands partially occluding the aorta of a dog produce, as a rule, no macroscopic change in the aortic wall under the band, even after seven or eight months.

* For description see Journal A. M. A., March 10, 1906.

that about one half of the lumen of the aorta was closed by the constrictor.

On opening the aorta the following conditions were noted at the site of the constriction: The wall was considerably infolded by the tape; a small coagulum was found loosely attached to the intima. The thickened intima was lacerated to a small extent over a calcareous placque. No other evidence of pressure or trauma could be found. The aneurismal sac was well filled with stratified coagula, except as a channel continued down to the aorta below the aneurism, and to the left renal artery—the only fully patulous artery emanating from the sac.* The clot was very firm in the anterior projection of the sac as well as in the sulci made by erosion of vertebrae. It was moderately firm in the body of the aneurism.

The amount and character of the clot in the sac, together with a consideration of the subject of clot formation, shows that partial will nearly always be preferable to complete closure of the artery. The only exception would seem to be when free anastomotic channels exist around the point of constriction, as indicated by the continuance of expansile pulsation. Incomplete closure avoids the special circulatory dangers incident to entire occlusion; it secure a firm, stratified clot wherein a too feeble flow of blood or the entire stoppage of the current would result in the formation of a soft stratified or a passive coagulum or a deficient amount of either.

As to the length of time pressure on the artery should be continued, my experience thus far would seem to show that it should be between two and three days, although one need not hesitate to continue it much longer if necessary. Future experience may prove that this period may be materialy reduced by increasing the coagulability of the blood prior to operation. The failure of return of *expansile* pulsation when pressure is released will show when sufficient clot formation has been secured.

Although the principles upon which the operation of gradual arterial closure is based are sound, much improvement in technic is desired.

The importance of this has induced me to propose a change of method from that required for effecting circular constriction of the aorta to one for making lateral pressure by means of a specially constructed aluminum-bladed clamp. A description of the instrument and the method of its application will show its relative advantages. It should be made with adjustable blades, so that the transverse axis of the compressing surfaces may be parallel with the long axis of the vessel at any level within the abdomen. The edges of all surfaces coming in contact with the vessels are rounded to reduce traumatism from arterial pulsation. The inward extension of the ends of the blades is to prevent the possibility of their becoming displaced; the blades are detachable to permit their application singly; a special joint permits their locking after being applied to the vessel, while the screw-bar permits gradual closure or opening. The scale indicates the distance between the blades.

The method of application is as follows: A finger being placed at one border of the aorta, a long-handled scarifier is passed along the finger to its tip and the peritoneum is torn longitudinally sufficiently to allow the finger to engage in the opening and separate the aorta vertically from adjacent tissues as far as its posterior border. An opening is made similarly on the opposite side of the vessel. A long-handled, blunt instrument, curved on the flat, is introduced into one opening and, guided by the tip of an index finger in the opposite one, is carefully worked beneath the aorta, separating the vessel from the spine and making a channel for the ends of the clamp blades. On the gentleness with which this is executed depends largely the freedom of the intima from laceration should an atheromatous patch be located over the channel. The clamp blades are then placed singly, guided by the finger. The hand is not yet removed, but is used for steadying the instrument until the handles are joined. The blades are then closed at least sufficiently to cause their ends to meet behind the vessel, as indicated by the scale at the handle. This is done without greatly impinging on the caliber of the vessel. The handles are supported at the level previously decided upon, the constrictor is surrounded with gauze and the abdomen is loosely closed around the clamp.

This change makes the operation more simple, materially reduces the time of operation and consequent vital depression. Other advantages are that it will better avoid danger to the integrity of the arterial tunics; the blades will always press in the walls of the vessel, at any level, smoothly and evenly, and the amount of pressure and of closure is more readily estimated and controlled. Finally—a point of much importance—the instrument can be more easily and safely removed.

IN CONCLUSION.

What, thus far, seems to be true in regard to direct, gradual arterial closure in the treatment of aneurism of the abdominal aorta?

1. The sac can be filled with active or stratified coagula by that method.
2. The arterial tunics can safely endure the necessary manipulation and pressure.
3. Partial, rather than complete, arterial closure will ordinarily be the safest and most effective means.
4. The lumen of fully patulous arteries supplying the viscera and emanating from the sac, as well as the main blood current down the artery, can be maintained.
5. The general vitality of a proportion of patients afflicted with the disease is sufficient to endure the necessary operative interference.

Discussion.

Dr. Huntington, San Francisco: The subject is one with which I am not familiar. I have seen the literature upon the subject and have been more or less interested in it. I rise particularly to call attention to the operation known as Matas operation. It has seemed to me to be an entirely rational procedure when the aneurism is approachable. I tried it very recently and the patient was practically well in five days after operation, and this without any deviation of the temperature.

Dr. Stratton: I appreciate the work of Matas, but

* This observation is confirmed by the clinical course after the operation, the patient having voided urine per catheter after the final constriction of the artery at 11 a. m. September 18th as follows: September 18th, 12:30 p. m.; 8:30 p. m.; and September 19th, 7:30 a. m., 240 cc. on each occasion.

as I stated, this operation is only indicated where the case is otherwise impossible to surgery. Some forty-five operations of endoaneuris morrhaphy in lessons situated in superficial vessels have been recorded, with a large percentage of cures. Gradual arterial closure, however, is indicated in the deep and otherwise unapproachable situations.

THE AMERICAN MEDICAL SCHOOL AND ITS ENTRANCE REQUIREMENTS. *

By DAVID STARR JORDAN, Stanford University.

The American university of today is a compound of two divergent and more or less antagonistic elements, which in the current academic languages, we call the college and the university. The college in theory is a place for general culture, for training the mind, broadening the intellectual horizon, and, so far as may be, making, by tasks physical, moral and mental, a man or woman better fitted for the work of the world. The university is a place of training for one's specific duties in life. Its functions include training for professional work, whatever the profession may be. Its general method is instruction through investigation, and its relation to the student is in many ways different from the task-setting work of the college. It demands for its teachers a somewhat different talent, that of a creative work, and of the power and the will in one way or another to add to the sum of human knowledge.

Our colleges are English in their origin. Our universities are German in their inspiration and method. Thus far in America the one has in a way antagonized the other. There has been a tendency to build up the university work by neglect of the collegiate work. Very many institutions have given instruction in professional or technical subjects of university grade to students who have had no collegiate training, often even no work of the still lower grade we call secondary instruction. On the other hand, the college has gradually pushed itself upward, relegating its lower years to the secondary school, and absorbing two of the years which would naturally belong to the university. In most of our larger institutions the fourth collegiate year is frankly given to investigation or to the beginnings of university work. In fact, though not in name, it belongs to the university rather than to the college. In a general way the admission to a German university—or graduation from the secondary school, Gymnasium or Real-Schule—corresponds with the end of the sophomore year in the best organized American colleges. In England, where the university as such is still in a state of probation, the conditions are not very different, so far as degree of advancement on the part of the student is concerned.

Recognizing these conditions, there is a strong movement in Germany to introduce the American college, to set off the last years of the Gymnasium or Real-Schule, as an intermediate stage between the local preparatory school and the school of technical training and investigation.

In America there is a tendency to separate the college into two parts, the junior college, of two years, in which the work is still collegiate, and the university college, in which the work of the university begins. This separation, first accomplished at the University of Chicago, is still little more than a name. About the University of Chicago several collegiate institutions have become junior colleges, that is, institutions which recommend some or all of their students to the universities at the end of the sophomore year. This arrangement is in many ways desirable. It is better for the university to be as far as possible free from the necessity of junior college instruction. It is better for the student at this period to enter an institution with large faculty and large resources. Furthermore, if the junior college has the teachers and conditions it ought to have, it is in very many cases better that the student should take his early training there, rather than as a member of the enormous mass of freshmen and sophomores our colleges are now carrying.

It is safe to prophesy that before many years the American university will abandon the junior college work, relegating it to the college on the one hand and to the graduate courses of the secondary schools on the other. Under these conditions its discipline and methods of instruction will approximate those of the University of Germany and other countries of Europe. Under these conditions the assistant professor of today will mostly find professorships in colleges; the professor will be an original scholar and investigator as well as a teacher, and the rule of Lehrfreiheit and Lernfreiheit will be established as a matter of course. It goes without saying that university conditions in America will differ in many ways from those of Germany. It is not likely that American legislative bodies will make a degree from the university a necessity for professional work, or its absence a bar to preferment. The trained man in America will have to take his chances with the rest, and for a time the "practical man," or even the ignoramus, may seem to distance him. But in so far as training is genuine, it will justify itself in every walk of life, and its value in the long run will be the more appreciated that it has no official attestation.

Thus far Stanford University has been a large college, well ordered for the most part, giving good instruction and with the highest collegiate standards. Its university work, though not extensive, has justly commanded respect.

The present condition of the university does not represent the original aim of the founders nor the ideals of the president. It has been the necessary result of limitation of funds, the long delay of litigation and the final settlement of the estate, and the recent unwelcome disturbance of the earthquake.

The elimination of these factors makes it necessary to look forward to the future. Is Stanford University to be a college or a university, or a compound of both? In my judgment the last cannot be a permanent condition in any of our large institutions. Collegiate instruction is relatively cheap.

* Abstract of an address before the San Francisco County Medical Society, April, 1908.

It is given well in upwards of two hundred institutions in America, and more or less badly in as many more.

University work on a large scale is expensive. If properly undertaken, it is the choice privilege of the new institutions that are generally endowed, or that are the educational pride of wealthy states.

Among these Stanford University must stand. Its great endowment was given for that purpose, and its freedom from outside control enables it to undertake lines of work, and long-continued series of investigation, efforts of the highest intellectual type, which would not find support in public institutions with their natural tendency towards the demanding of immediate results.

In 1892 Governor Stanford said repeatedly that he wanted this institution to combine the technical work of Cornell University with the highest post-graduate work or work of investigation, at that time represented by Johns Hopkins University; that he wished it to be a university in the highest sense, "beginning," to use his own words, "where the State University leaves off." I may say in passing that at that time the University of California was chiefly an undergraduate college. In its present expansion, it has largely begun where it then "left off," and we may admit that it has already gone much farther in the realization of the ideals of Governor Stanford than Stanford University has yet gone. But we have time before us, and most things are possible with time and patience.

To make a university, in the world sense, of Stanford University the following elements seem to me essential:

The elimination, as soon as possible—let us say in the course of five years—of the junior college, by the addition of two years to the entrance requirements. This need not necessarily raise the requirements for the bachelor's degree, which would then be, as now, two years of approved university work beyond the work of the junior college. These requirements are high enough. There is much to be said in favor of lowering them to the level of completion of the junior college course. This would correspond to the bachelor's degree of twenty or thirty years ago.

With this should follow the extension of the university as such and the intensification of the higher work. Especially medicine should be added to its scope of instruction, and other lines of advanced work would naturally follow if the university were relieved from the burden of elementary instruction,—of work which is done more or less well in every part of the country.

Unlike the German universities the American universities must include instruction in the various professions of engineering. This is in Europe generally relegated to a separate institution, the Polytechnicum. The development of the creative phases of engineering is costly, and yet of the highest importance to the material progress of the country. Besides the increase of equipment, the library must be greatly enlarged, a process at present going on at a generous rate. It will also be necessary to provide adequate means for the publication of results of scientific, literary and other forms of research. The means for beginning this work have been already provided by your honorable board.

It will also be necessary to provide means for fellowships and scholarships. The present writer has been strongly opposed to the present fellowship system in America, believing that its evil of hiring men to study in a certain place often outweighs its advantage of furnishing promising men with means of making the most of this period of training. But in a matter of this kind it is not possible for a single institution to stand aloof from its associates, and to demand an adequate return in laboratory or other assistance from each fellow will tend to minimize these evils of the system.

The practice of medicine is no longer a trade but a profession. It is an art having its basis in science—an art of the greatest delicacy resting on science the most exact and the most profound. The time is past in which medicine can be taught as a trade, even in free America, which has no statutory provisions to compel professional men to be enlightened or honest or competent. But the nature of the subject and the necessities of the people demand that this work be done in the best possible way. Medicine must be taught by the methods which science teachers have found most effective and the study of its practice must follow a thorough knowledge of the sciences on which it depends.

For these reasons, the old fashioned medical school of America, the association of physicians working without pay and without endowment, dealing with students ignorant of science and literature, is passing away. Medical instruction is resuming its place in the university, where it has the benefit of university standards, university endowments, and university atmosphere. Of the many scores of medical colleges existing in America today, only those can live which become integral parts of the universities. The rest have ceased to be useful and so far as medical science is concerned most of them are positively harmful, and this remark applies as well to those which without real university standards maintain a nominal connection—for purposes of advertising—with some university or college.

The essentials of medical instruction are well equipped laboratories and hospitals, competent teachers, a standard of admittance which shall exclude the ignorant and those incapable of scientific conceptions, and a high standard of graduation which shall exclude unworthy men from the professional degree. Our universities are able to demand and to supply all this in their treatment of engineering. A few have done it in law, and most successfully, and a few have been able to do the same for medicine. Others might do it were it not for the one bugaboo—the fear of the loss of numbers through the maintenance of standards. Too many boards of trustees and some administrators still look on higher education as a game in which the scores are made

by the number of degrees granted or the number of names in the catalogue. The very purpose of standards is to reduce numbers by shutting out of academic honors those who do not deserve them.

It is doubtless true that the young man of 18, the graduate of a high school, can follow the study of medicine with some intelligence, and that he can learn a little of science while in the medical school, in a year devoted to elementary chemistry, physiology and anatomy. It is also obvious that this equipment does not give the spirit nor the viewpoint of a scientific man and that the three remaining years of pathology and clinics will not make a scientific physician nor give to this, the most complex and exacting of professions, a training to which the university can afford to set its seal of approval.

The four years of a college course spent primarily on physiology, biology and chemistry, and secondarily on languages, literature and history, do give such training in generous degree. The requirement of the degree of A. B. with scientific studies as major subjects is required as a prerequisite for entrance on a four years' professional course in medicine by our strongest institutions. In criticism of this policy it is urged that the average student enters college at 18, four years of college and four of professional study bring him to the age of 26 before leaving school, even though his course goes on without interruption. It is further truthfully urged that the requirements for the bachelor's degree today are fully two years in excess of those prevailing twenty-five years ago. It may further be said, that a large part of the virtue of the university training comes from life within the university atmosphere. The student in medical work or other professional study participates in this atmosphere, he helps to create it, and his relation to it as a graduate student is even more vital than that of his collegiate days. Hence a university can well afford to abate its undergraduate, or non-professional requirements, in favor of the student who is to continue for an advanced period in professional or university work.

In accepting the justice of part of this argument, ably set forth by President Eliot and by President Butler, the requirements for the degree of A. B. have been in some institutions reduced so that a competent student may receive the degree after three instead of four years of undergraduate study. Other institutions have reached the same result by such an arrangement of the work as to devote the senior undergraduate year to independent investigation or to the beginnings of professional work. In medicine, this provides that the fourth year of collegiate work shall be the first of the four years of medicine. In other words, it gives seven years from the secondary school or the high school to the university degree of M. D., and to the present writer it seems that the university should not be satisfied with anything less than this.

There is, however, another forward tendency in university management, which must be reckoned with in this regard. There is a natural cleavage line in our undergraduate courses at the end of the sophomore year. The junior year of college represents in maturity and in requirements approximately the first year of the German universities. It is the year when the student begins to be independent and to shape his studies with more distinct reference to his future career. Hence these first two years of the college course have been set apart from the others in some institutions as the junior college, while for the two higher years the name of university college has been suggested by Dr. Harper. Dr. Harper went farther to suggest a degree or, as we may say, a half degree—Associate in Arts—for those who have completed the work of the junior college, but this suggestion has met with little favor. We hear too much already of degrees in our educational system. Conditions would be healthier in many ways if we could cut them all out—leaving only the professional degree of Doctor and Engineer—in the various branches.

It is believed by some, the present writer among others, that the universities of America should begin with the junior year, leaving the freshman and sophomore years to the colleges and the larger high schools and preparatory schools. By this arrangement all work of the university should be regarded as professional, confined to such subjects as are needed for professional training, and the profession of teaching among the rest, with such other subjects as may give breadth of vision or personal satisfaction, but not counting as constituents of a degree.

In this case the course of medicine should be lengthened to five years, by the inclusion of courses in science. The course in law should be lengthened to four years, by inclusion of history, economics and political science, and a similar extension should be made in the courses of engineering. These are now in most American Universities crowded into four years regardless of the fact that more than four years' work is actually required, and by this requirement all studies of literature and humanities are virtually relegated to the high school; as a result, if the successful engineer does not grow up illiterate, it is not because of any effort of the university. His literary culture he must pick up as he can and through his own efforts and his association with students in this regard more favored.

The final settlement of this matter, in my judgment, will be along the lines indicated above. Meanwhile the requirement of a single year of collegiate chemistry and biology as a prerequisite to entrance on a four years' medical course may be a necessary step in advance. But it is only a step—a short one and a temporary one. The requirement of two such years is a step in advance—twice as long, and therefore twice as valuable. There ought to be some way of indicating our official disapprobation of the medical departments that do not take it, and for a time its results will be reasonably satisfactory. But we must go farther. If we do, we may turn our senior year over to pre-medical science, or we

may require a degree with chemistry or physiology as major subject before beginning on medicine at all, or we may begin all professional work with the third or junior year of the present American college, in which case we may strengthen the medical course with another year of scientific requirements and further clinical experience at the end. On the whole, this last plan seems to me most nearly in the line of the development of the American University system.

THE LEGAL ASPECT OF AN INCISION, ESPECIALLY OF AN ABDOMINAL INCISION.*

By HENRY J. KREUTZMANN, M. D., San Francisco.

A few months ago it just so happened, that on one and the same day I read three different publications which made rather a deep impression upon my mind.

The first publication is by Dr. William L. Rodman, professor of surgery in Philadelphia; its title reads "A Plea For Early Exploratory Laparotomy in Gastric Diseases of Doubtful Nature" and was printed in the *Journal of the American Medical Association* No. 3, January 18th, 1908. The reading of this paper brought back to my mind a paper read by our distinguished fellow member Dr. T. W. Huntington before this Society a few years ago. Dr. Huntington pleaded for surgical interference instead of medical treatment in certain cases of diseases of the stomach and of the intestinal tract. During the discussion, which followed the reading of this paper I ventured to advocate early incision for diagnostic purposes.

It is encouraging to me to read Dr. Rodman's words "The appalling complications of hemorrhage, perforation [of the stomach] are altogether too frequent and can, I believe, only be prevented by earlier diagnosis of the conditions making them possible, and this cannot be done in the present state of our knowledge save by timely exploratory laparotomy. The danger of such an exploration if done in time, is inconsequential and out of all proportions to the benefits derived therefrom."

The second of these papers is written by Dr. Carl Hartog (Berlin); its title reads, "Zum Fruhen Aufstehen Koeliotomirter," which means "About Letting Patients After Coeliotomies Get Up Early" and is published in *Zentral Blatt Fur Gynaekologie* (Review on Gynecology) 1907, No. 52. This proposition is not original with Dr. Hartog; he calls attention to the fact, that Dr. Ries in Chicago in 1899 and soon after him Dr. Boldt in New York made their patients leave the bed a few days after abdominal operations. Others have followed and Dr. Hartog himself recommends the practice after an extremely favorable experience on 150 patients. The third publication was found in the San Francisco *Chronicle*; it was an item to the effect that a doctor in Los Angeles had made a costly error; he had made an abdominal incision upon a woman, for which a verdict had been found against him for $5,000; mostly because a child was born after the incision, which soon died.

If we compare the contents of these three recent publications, it becomes apparent to us, that there is something wrong in legal medicine, as far as malpractice is concerned; and in my opinion, based on personal experiences besides these publications, it is quite evident that legal medicine or medical jurisprudence has not kept pace with the progress of the science and art of medicine and surgery, has not taken due cognizance of the change that has occurred in the views of physicians on many topics in the last fifty or sixty years.

The fault lies with the physician; it is our duty to enlighten the lawyers and judges, to assert our rights and to protest against injustice. But very little of this is really done; the small interest taken in this very important matter is shown by the fact that in all these many years that I am a member of this Society I do not recollect that ever a paper was presented on any subject of malpractice.

There are several reasons for this neglect and inactivity; legal medicine is not taught in medical schools, as a rule, and it seems is looked upon as something inferior, not scientific, by most physicians. Yet medical jurisprudence, also in relation to malpractice is as much a scientific branch of the great tree of medicine as bacteriology, obstetrics, hygiene, etc.

Furthermore in dealing with alleged malpractice it naturally becomes necessary to report an error, a mistake, an accident, a failure; it is human nature not to speak of one's shortcomings and notwithstanding our daily life as physicians and surgeons is replete with errors, mistakes and failures, we hear little of these in our publications. When we know that, as a matter of fact, adverse cases are not reported but are carefully wrapped in silence, what value can have our papers, discussions and publications? An entirely false impression is made by these publications, many of which are read by laymen; the true condition of our knowledge, of our accomplishments is not represented in our journals, the picture is altogether too rosy.

But this neglect of legal medicine is also against our practical interests. After all, what are we practising medicine for? Science, humanity, public welfare—all this sounds very well, but we are learning and studying and putting in our time and energy to gain a decent livelihood; this is eminently proper and we are just doing what other professions are doing, the lawyers, the teachers, the clergymen.

When we attend medical meetings, read and discuss papers, etc., we do this to enlarge our knowledge and to become better fitted to earn money. This is likewise proper; then it must also be proper to protect ourselves against extortion under the guise of suits for alleged malpractice by reading papers on the subject of malpractice.

Medical jurisprudence or legal medicine, as the name implies, is a combination of medicine and jurisprudence; we physicians must have something to say here, we must help to formulate the laws, to

* Read before the San Francisco County Medical Society.

frame decisions of judges. But so far as I can see, little of this is done. Since a few years, the *Journal of the American Medical Association* publishes regularly Decisions of Supreme Courts. But I have never seen any comment on, any criticism of, or any protest against any of these decisions. Yet many of these are not in accordance with our views, and the worst of it is that the absurd decisions are handed down from case to case as "authorities!"

Amongst other things which need a revision and correction is the legal aspect of an incision, including an incision opening a cavity, and more especially of an incision opening the abdominal cavity.

In my opinion, such an incision must be valued legally as a means to diagnosis; the incision must be considered the last link in the chain of physical examinations and must have the same legal standing as other diagnostic means have.

We physicians are entitled to this claim for three reasons:

1st. The incision is without danger;
2nd. The incision is without pain and suffering;
3rd. The incision is without consequences.

As far as the first point is concerned, the danger of an incision, it is not necessary before a body of medical men to discuss this matter; but before a court of justice and before lawyers we must assert our right and proclaim our opinion, that an incision, no matter where made in this era of absolute asepsis, is without any danger whatsoever.

As far as the second point is concerned, pain and suffering, we must state that operations are performed nowadays under an anesthetic, either general, local or spinal, so the pain during operation is excluded positively. The suffering afterwards from an incision done under asepsis is nil; this applies also to the abdominal incision. I have performed many abdominal sections and observed the patients carefully afterwards, so I am in a position to talk.

It would be absurd to deny that patients suffer after operations, especially after abdominal operations; the anesthetic makes them sick, produces headache and vomiting; some suffer from thirst, most suffer from gas pain. But as soon as the effect of the anesthetic has disappeared, when through our efforts gas has been expelled, the patient's position changed without fear, we have a right to proclaim that the patient is not sick, and as an expression of this view we see many surgeons allow their patients to leave the bed at once.

But anyhow it is not the incision that produces pain and suffering. In several instances I started to perform a vaginal operation and was compelled to open the abdomen supra pubes; the patients did not know this and would not believe me at first, that an incision had been made, since they had no pain in the incision. I have asked a number of patients to tell me where they had been cut, and most of them were unable to locate the actual place of incision. Only a short time ago I made a supra pubic transverse division of the skin; when the patient saw her incision for the first time about a week after operation, she exclaimed, "Oh, I thought you had cut me here!" pointing to the region of her stomach.

As far as consequences of an incision are concerned, no evil consequences are seen in an ordinary incision, done under aseptic precautions; with an abdominal incision there are always two things to be considered, adhesions and hernia.

It has been shown by experimentations and clinical observations, that sero-serous agglutinations do not persist; such adhesions form frequently after opening the abdomen, but they disappear. Lasting adhesions are produced when the retroperitoneal connective tissue has been opened, either in our surgical work or after destruction through inflammatory processes. The incision offers such wound surfaces for permanent adhesions, and they occur wherever the peritoneum is not closed most carefully. If this, however, is done with exactness the danger for the occurrence of permanent adhesions in the incision is slight.

The same applies to hernia; careful union of the divided parietes under strictly aseptic precautions renders hernia a matter of rarity.

What I have said here is not for the purpose to underestimate the responsibility and importance of any and every surgical interference, but I wish to emphasize the fact that in the opinion of modern medical men an incision is not a formidable operation fraught with danger, with suffering and evil results, but is on the contrary without danger, without suffering, without bad consequences, and should be employed with the same ease and freedom as we employ other modern diagnostic means: cystoscopy, spinal puncture, tuberculin inoculation and many others.

This view held by the medical profession must be accepted by the legal profession; then the mere fact that an incision has been made, cannot form the basis for a suit for alleged malpractice. If a person wishes to bring action against a physician when an incision has been made, it must be shown,

1st. That real damage was done;
2nd. That the incision caused the damage;
3rd. That nothing else but the incision caused the damage.

The burden of the proof of these three points must rest with the plaintiff. Up to the present time the practise before the courts has been altogether too loose; physicians have been sued upon the most flimsy grounds from disappointment, revenge, mercenary motives; have been subjected to heavy expense to defend themselves, had to face the uncertainty of a jury trial and in many instances have been severely fined. Let me mention to you one of these pretexts: for mental worry and anguish before an operation has been asked the little sum of $20,000. Certainly patient and relatives during sickness and before operation have anxious hours, but the attempt to convert this anxiety into ready cash must be considered blackmail pure and simple. If in the case of an incision the worry before an operation is valued at $20,000, there is no reason why the same value should not be put on in another case and in every case. The logical

consequence then is, if a physician charges $500 for an operation and the patient values the worry before operation $20,000, the physician owes the patient the balance of $19,500. What a ridiculous proposition!

Other suits on equally atrocious basis have been brought against physicians; that such conditions can exist is only possible because physicians do not know of them. But unfortunately physicians seem not to want to know of them. A few years ago I intended to read a paper on a medico-legal topic before the California State Medical Association; I was not permitted to do so, and the then executive committee wrote me a letter explaining that in their opinion it was not wise to read such a paper, since some lawyer might make use of remarks expressed during the discussion, to the disadvantage of a physician.

I think that this standpoint is wrong; the medical profession should know, the more the better, of malpractice suits. Cases should from time to time be reported and freely discussed. The medical profession should be enlightened and instructed that they have responsibilities as well as rights. Responsibilities also towards the fellow practitioner. Careless talking about the doing of a practitioner is bad, adverse criticism of another physician's actions with the intent to slander is criminal. The threat that physicians, so forgetting medical decency, would be brought into the limelight of publicity—indecent work is always done in the dark—would have a fine educational effect.

On the other side we should never forget that we have, so to say, a constitutional right to commit an error of judgment, that the law protects us when committing an honest error of judgment. Let us lay stress on the fact at all times and on all occasions that the science of medicine is not an exact science, that the practise of medicine is not the application of an exact science. In diagnosing our cases, in selecting and carrying on treatment of our patients, we have to use our judgment. The keener our perception the better our training, the larger our experience, the less errors of judgment; but nobody is exempt from errors with consequential failure and disappointment.

Furthermore, let us keep in mind that before the law we are required to use only ordinary care and skill of the profession. This is often lost sight of by medical men, especially when on the witness-stand. It is an entirely different matter, whether a physician criticizes the action of a confrere while discussing a paper before a court of his peers, that is in a medical meeting, and while called to testify about the doings of a fellow practitioner before a jury. Unfortunately this seems a difficult matter for many.

I have made all these remarks in order to arouse interest for legal medicine amongst physicians. We do not wish to shield carelessness and incompetency; but if a licensed physician honestly and faithfully endeavors to serve the best interests of his patients, and if he meets with ill success, as all of us frequently do, there should not be added to his professional misfortune the threat or the actual institution of a malpractice suit. Such unjust suits are only made possible by the assistance and co-operation of medical men. I believe if everybody fully realizes the injustice, the danger, the expense of these vicious hold-ups; if an educated profession is fully informed about their duties and rights, these legalized attempts at extortion will be looked upon as relics of a barbaric age.

Discussion.

Dr. T. W. Huntington: I have little to say further than in friendly criticism. In view of the fact that this paper involves questions which are regarded as, in a certain sense, authoritative, I should have been more thoroughly in accord with the author's idea had he been a little more temperate and guarded in one or two particulars. We are manifestly on dangerous ground in proceeding upon the assumption that an abdominal incision is absolutely without danger from the immediate standpoint, or without consequences in the future. While it is true that at the present time abdominal incisions or incisions elsewhere are made without serious result, yet I believe that it is incumbent on every operator to insist that there is a definite hazard in all incisions. Furthermore, it is conceded by most authorities that remote consequences such as intervisceral or visceroparietal adhesions are always to be thought of as a dangerous menace to the subject. As an earnest believer in the legitimacy of the so-called "diagnostic incision," it is still to be insisted that the surgeon, in resorting to such a step, assumes a more or less serious repsonsibility.

Dr. Dudley Tait: After listening to Dr. Kreutzmann's communication, which any court would construe as an eloquent plea, I question very seriously whether in case of illness the reader would not resort to the diagnostic skill of his medical and surgical friends before even thinking of what he believes to be a harmless incision. The perusal of a large number of court decisions leads me to believe that each damage case stands by itself; no general conclusions can be given. Some facts, however, stand out clearly. 1st. Juries do not listen to instructions from the court, no matter how much medico-legal science is poured into their ears. 2nd. The medical profession is largely responsible for the layman's belief that the practice of medicine has become a trade, and that its followers should be treated accordingly. 3rd. Juries frequently sympathize with well meaning and charitably inclined practitioners, but when the defendant is a corporation or especially a mutual aid society hospital, sympathy is seldom forthcoming. I am perfectly in accord with the latter sentiment, and I am perfectly willing to state that it has been my practice in the past, and will be in the future, not to testify in a well deserving case against a corporation or mutual aid society hospital.

Dr. Stanley Stillman: I am sorry that I have not heard the whole of Dr. Kreutzmann's paper, for I came in late and only heard the closing part of it. The case is pretty well understood by most of us, and I think we all sympathize with Dr. Kreutzmann very heartily. I remember Dr. Lane's adage in this particular, that there are always three parties to a malpractice suit—1st, charity patient; 2nd, envious doctor; 3rd, shyster lawyer. I think there are very few cases of malpractice suits that can be recalled by any one here in which these parties were not present. I have been sued three times myself by patients who were at the City and County Hospital. These were all fracture cases, they all got good result, and what they were kicking at I do not know. Dr. Ellinwood was the one who really was being

sued, as he had the money and I did not. None of these cases ever came to trial. The question of diagnostic incision has been brought up by Dr. Huntington and Dr. Tait. I do not know just what bearing it has on the paper because I have not heard the paper. I am not myself accustomed to regard an exploratory incision as a harmless procedure by any manner of means, nor do I think that such an incision should be made until all other means of diagnosis have been exhausted. I do not like the expression "exploratory incision"; it suggests a Polar or South African expedition. Call it a diagnostic incision or a "failure to diagnosticate" incision. I do not think that it is right to teach that diagnostic incisions are simple or harmless. I can not imagine that Dr. Kreutzmann takes that position because I know him too well. Incisions should only be made when called for, and it is right and proper that they should be made when the differential diagnosis can not otherwise be reached. I have had patients die after a diagnostic incision, and I did not know what caused the death. For such result I see no reason for charges to be brought against the surgeon who made it.

Dr. H. C. Moffitt: I have not been called up in court, but I feel strongly on one point that Dr. Kreutzmann has brought up and that is, the duty that one man owes to another in court. I was called in court some years ago as an expert witness and I made up my mind that it would be my last appearance if I could by any chance get out of a court hearing again. We medical men have got the reputation in law as being willing to appear on either side of any case. My experience in court that day would seem to prove it. We are altogether too ready to come in for a fee and give testimony which in many other cases we would be absolutely unwilling to give. I have just now a patient who has been unfortunate in his married life and who intends to bring a suit for divorce. His wife got an inkling of this fact and has employed a delegation of medical experts on her side to prove this man is a sexual psychopath, a thing which I know is absolutely false. These men must know little about the case, yet they are willing to appear in court to testify against this poor individual. Until we raise a higher standard among ourselves it seems to me we can not blame the legal profession for all the harm that is done. I agree with Dr. Tait that unfortunately in many of the suits that are brought against corporations patients do not get fair deals in the courts. I think that the medical profession is in need of the teaching that Dr. Kreutzmann wants us to get. In medical schools legal medicine should be taught as a branch of medical education, and we should all use our influence on the professional expert in the courts. I believe that a diagnostic incision is absolutely necessary at times, but only after every other means has been taken to reach a proper diagnosis. We are all apt to try to reach intricate diagnoses too quickly. I would advise having the patient under observation in a hospital for the proper length of time in order to exhaust all methods before we proceed to a diagnostic incision.

Dr. Kreutzmann (closing): I thought I had spoken quite plainly on this matter. I am somewhat surprised to hear this talk about diagnostic incision. I have not spoken about diagnostic incision; I have not said a word about it. I have explicitly stated in my paper that I look upon an incision as the last link in the chain of physical examinations. All these cases that have been cited where patients died from diagnostic incision have nothing to do with the paper to-night.

A. M. A., 1909.

The next meeting of the A. M. A. will be held at Atlantic City, June 8-11, 1909.

A NORMAL LABOR.*

By W. M. BARRETT, M. D., Redwood City.

At the last meeting of this Society, it having been suggested that I should read a paper upon some obstretical subject, our acting president, with his usual generosity, gave me the whole domain of obstretics from which to select my subject, it being tacitly understood, however, that a record of some personal experiences would be preferable. In keeping with that desire, I have selected normal labor, and will present to you as briefly as possible my ideas as to how these cases should be managed in a village or country practice.

I think it quite important that the patient, especially if she be a primipera, should be under surveillance during the latter months of pregnancy, first, that we may make clear to her the nature of the ordeal through which she must shortly pass, and, second, that we may be able to guard against and relieve many of the accompanying disorders of pregnancy. We will assume that the woman is primipera, and that her accoucher is making his first visit. During that visit he can make the woman his lifelong friend if he so desires, and I believe it is his moral duty to do so. By his manner he will, of course, convince her that she has his deepest sympathy, and by his self-confidence also convince her that he will be fully able to manage her case successfully.

But above all things he must give her a clear and honest statement of her case. I talk to her about as follows: "Your labor will be a natural process, with only a minimum of danger, scarcely worth considering. You will suffer some pain; not very much. Your pain will be controlled by chloroform. I will keep you fully informed as to your progress, during each stage of the labor."

I then explain to her the three stages of labor, and the characteristic pains of each. After this talk she is a happier woman, a better friend, and a more satisfactory patient. We are all more or less cowards when called upon to face an unknown danger.

While gestation is a physiological process, the great alteration in the sexual organs, and the strain to which every other organ in the body is subjected, frequently results in functional and organic changes that cause us the deepest anxiety. Among them are nausea, albuminuria, anemia, constipation, varicose veins, and a long line of nervous manifestations, any one of which, if permitted to continue, may cause serious trouble during labor, or leave its evil impress upon mother or child, or both, in after life. When albumen is present, whether of functional or organic changes, the treatment is usually the same: an exclusive milk diet, warm baths and purgation.

While I have no authority for its administration, I have had more benefit from citrate of potash than from all other drugs in albuminuria, give in fifteen grain doses every three or four hours. I am equally enthusiastic about the Blaud pills in the treatment of the anemia of pregnancy. The best results are obtained by giving one pill before each meal the first day, and increasing the dose one pill

* Read before the San Mateo County Medical Society.

each day, until six are taken before each meal the sixth day, beginning again with one and increasing, as before. It goes without saying that we must not forget the dietary, fresh air and sunshine. Fortunately pernicious anemia is rarely associated with pregnancy. Such women rarely conceive, but if they do, we can always empty the womb, which seems to me to be the only rational treatment.

Perhaps the most frequent accompaniment of pregnancy is nausea, or morning sickness. Some of these cases are very distressing and cause us no little annoyance. If aggravated, the woman should be kept in bed. Careful feeding must be insisted upon. A cup of black coffee taken in the morning is often beneficial. Solid food should be interdicted. Milk and lime water, in small quantities, should be given every two or three hours. Peptonized milk and egg albumen should be tried, and if the stomach rejects everything, rectal feeding should be employed. Lavage of the stomach should always be tried. It is frequently disappointing, but often does good.

Among the drugs recommended oxalate of cerium has given me better results than all others combined. Cocaine is entirely too transitory, and is not safe if continued any length of time. A couple of drops of creosote in a wineglass of water, and given every few minutes in drachm doses will often check it when other remedies fail. I have only seen one case of pernicious vomiting of pregnancy. It had continued several days, and her condition was so alarming when I first saw her that I called my friend, Dr. Ross, in consultation. We considered it advisable to empty the womb at once. The family objected to it, so we quit the case, and another physician was called, who agreed with the family. The patient died in three or four days afterwards.

Fortunately these cases of pernicious vomiting are very rare.

When called to a case of labor I insist that the nurse cut away all superfluous hair from the genitals, and scrub the same with soap and water, after which I make a digital examination. I think lysol the ideal antiseptic in midwifery. After scrubbing my hands with soap and water they are soaked in a hot lysol solution, then in alcohol, and again in the lysol solution. I wish to insist that the physician should not touch towels or bedclothes before making his examination. A failure to observe this precaution has caused many cases of infection. I have often seen physicians thoroughly cleanse their hands, wipe them on a towel and lift the bed-covering with the examining fingers before making the examination. Lubricants for the fingers are dangerous, and should not be used. They are not necessary, even when applying the forceps, and far more dangerous than if used in making the digital examination. There is no such thing as an aseptic lubricant, and it is criminal negligence to place forceps up in the body of the womb smeared with germ-ridden grease.

If the woman be a primipera we usually find, as a result of our first examination, that the os is high up, dilated only about the size of a ten-cent piece, and lying in the hollow of the sacrum. This means from ten to twenty hours of waiting. If the pains are not severe and the presentation is a normal one, the physician's presence is a disadvantage at this period of the labor, and he should absent himself for several hours. On his return, if he finds that the pains are nagging and inefficient, chloral hydrate, in doses of fifteen grains every half hour till three doses are taken, will regulate the contraction, and give the woman a period of rest during the pains. The giving of chloral hydrate at this stage will necessitate the giving of less chloroform subsequently.

My rule is to keep the patient away from the bed until the second stage is well under way. If sitting or walking she gets the benefit of gravitation, and the moral effect is better. It is also just as easy to give her a few drops of chloroform when she is sitting in a rocking-chair as it is to administer it to her when she is in bed.

I give sufficient chloroform to relieve the pains almost entirely during the dilating stage; in fact, she should have more chloroform during this stage than during the expulsive stage, for two reasons: first, the pains are more severe; second, the objection that chloroform slightly lessens the action of the abdominal muscles does not apply to the first stage.

After dilatation is complete there should be some cessation in the use of chloroform until the head impinges upon the perineum. When this occurs anesthesia should be carried to the surgical degree. I am a firm believer in the liberal use of chloroform in labor. Practically there is no danger attached to its use. During labor it eliminates untold agony, and I am sure that patients to whom it has been administered convalesce much more rapidly than where it has been denied them.

As regards the passage of the head, I wish to say that I do not believe there is any such thing as supporting the perineum. We can support the head, and hold it back until the muscular structures, as they invariable will do, have relaxed. The cardinal point is this: we must remember that slow extension is necessary in order that the perineum will not be injured, and that flexion must be maintained until the occiput, or sub-occipital point, has become fixed under the pubes. By so doing we get the sub-occipito bregmatic, the shortest diameter of the fetal head, only three and one-quarter inches.

We now come to the delivery of the placenta. While I have nothing original to offer, yet I consider a proper delivery of the placenta one of the most important procedures of the confinement. A hurried delivery of the placenta will cause hemorrhage, and a careless one will produce infection afterwards. We cannot lay down an arbitrary rule as to time of its removal. The woman's condition, and the weariness of the womb-fibre should be our guides. If the woman is exhausted, and the womb without strength to contract we should not attempt the forcible expulsion of the placenta, as recommended by Creede. Hurry at this time means hemorrhage, also retention of pieces of afterbirth. Just a little waiting, stimulation of the patient, and gentle massaging of the womb will usually bring about a natural and perfect delivery of the placenta and its membranes.

As it is now known that the patient can become infected from intestinal contents, I see that her bowels are moved thoroughly, within twenty-four hours after delivery, with oil or salts.

In closing I wish to make a plea for the frequent use of forceps. Skill in their use can only be acquired by gentleness, patience and practice. With forceps and chloroform at our command, the day of long-agonizing labors should be of the past.

PRE-RETINAL HEMORRHAGE.*

By C. S. G. NAGEL, M. D., San Francisco.

I am persuaded that an exact diagnosis concerning the subject of this paper is at times not made with the result of serious prognostic error, detrimental to the physician. Apart from this practical consideration, the history I wish to report has several special interesting points, from the standpoint of the physiologist as well as pathological.

Regarding the name it seems to me best for the present to continue designating the hemorrhage as pre-retinal (and this is general in preference to "sub-hyaloid") for although there are now a few anatomical reports locating the blood behind the margo limitans interna, whilst it has been described in but one instance, I believe, as being absolutely in front of the retina, still the number of such examinations is so small as yet that it seems premature to adopt a new name (marginal hemorrhage e. g. after Elschnig) until we should find either that the retinal seat be really the usual one or be able to distinguish clinically between a pre-marginal and post-marginal hemorrhage. The physiological effect on vision in either of these cases would be the same and is anticipated somewhat by the term "pre-retinal."

Like other, though more common, ophthalmoscopic pictures, such as glaucomatous cupping, pre-retinal hemorrhage has been misread anatomically by the first observers, Esmarch and especially Liebreich,[1] who was the first to depict a typical case, locating the blood behind the retina. Although Leber,[2] in criticizing Liebreich's report had established the error of this view, Wecker and Landolt[3] still described the hemorrhage as being behind the retina. Similar differences are recorded in English literature, a review of which is to be found in the contributions of Haab,[4] Dimmer,[5] Levy and others. The hemorrhage between retina and vitreous, in its typical aspect, shows a horizontal straight outline at its upper border, being more or less semicircular below. It must be remembered, however, that this is neither the constant appearance in all cases, nor does it, where present, invariably persist throughout the whole course. It must further be borne in mind that the conclusion as to the blood being in front of the retina, can be arrived at immediately from the ophthalmoscopic appearance in those cases only where blood vessels have partly been covered thereby, or where the papilla has thus been hidden more or less. The usual and most characteristic occurrence for the hemorrhage, i. e. over the macula, has been accompanied not infrequently by pre-retinal hemorrhages elsewhere in the fundus, and sometimes still further by other fundal changes; hemorrhages merely outside of the macula, on the other hand, have been reported much less often. Generally the several patches have been large, from 3 to 5 papilla breadths at the longest and mostly wider than high; when relatively massy the blood can break through into the vitreous. As a proof of the blood being a free and uniform mass the change of its straight upper border with inclining of the head has several times been observed—that line always returning to the horizontal. According to Leber (l. c.) the striking characteristic of the straight upper border comes only about after the blood corpuscles have sunk downwards, and the plasma above them has in many instances been seen ophthalmoscopically as a whitish area. Especially retinal veins, but also retinal arteries have been pronounced to be the source of bleeding. I omit a detailed account of minutiæ of the ophthalmoscopic appearance, observed in some instances, e. g. a stellated figure in front of the blood, probably caused by a creasing of the hyaloid, or a white line circumscribing the whole patch in cases of larger hemorrhages, which line Haab (l. c.) looks upon as evidence of a process of agglutination and proliferation of endotheloid cells.

Histiologic data are, as yet, wanting.*

Regarding the etiology we may be brief. My impression from the literature makes me accept, on a whole, Haab's conclusion that every possible cause for retinal hemorrhage may, under favorable conditions, bring about such a one between retina and vitreous. Still the number of reports that safely might be used here for statistical purposes is not very large, however, one cannot help being struck that graver affections especially inflammatory processes accompanied by retinal hemorrhages, seem to be singularly without this complication. In a measure this conclusion is also borne out by the impression that younger people have oftener been affected than older ones. Hill Griffith (l. c.) gives the following figures regarding 83 cases of spontaneous intraocular hemorrhages without eye complications, excluding cases due to trauma, optic neuritis, nephritic retinitis, disseminated chorioditis, etc. He gives these causes for his cases: anomalies of blood, alterations of small vessels, stasis in heart disease, thrombotic and embolic processes. As to

* Read before the San Francisco County Medical Society, and the San Francisco Society of Eye, Ear, Nose and Throat Surgeons.

* An anatomical examination reported by Fisher (a case of subhyal. hemorrhage, etc., Ophthalm. Hospit. Reports xiv, ii) has not been accessible to me, but according to de Schweinitz (Diseases of the Eye V. ed., 1906) F. found that the hemorrhage had detached the internal limiting membrane from the retinal layers which had not been invaded and had occupied the space thus formed. That Anderson (V. Haab, l. c.) had made an anat. ex. appears to be erroneous according to Dimmer (l. c.) Hill Griffith (Brit. Med. J. of Nov. 12, 1904) was able to satisfy himself that the slight residue of the hemorrhage actually was in front of the retina. Uhthoff (ibid.) refers to a "pre-retinal" hemorrhage which anatomically proved to be under the limitans interna retinae. Also Benedek (V. Graefe's Archiv., June, 1906, and Zeitsch. f. Augenhlkde, April, 1907) publishes similar findings in 3 bulbi. In front of the relatively intact retina there was in all cases a rather thick (0.3-0.6 mm.) compact mass of blood being separated by the membrana limit interna from the vitreous.

the seat of the hemorrhages, 8 belonged to the vitreous, 14 were pre-retinal, and 20 retinal followed by exudation (hemorrhagic retinitis). Of the 14 cases of pre-retinal hemorrhage, 10 referred to females and 4 to males, and in all 83 cases there were 47 female and 36 male. More particularly according to the publications of Liebreich and Leber, it would seem that anemia and menstrual anomalies relatively often are causative factors.

Prognosis is good, the blood becoming absorbed in 3 to 6 months, and the histological structure of the retina not having been interfered with vision becomes normal again.

The history of my own patient is as follows:

Mrs. X., 36, physician's wife, born one child. With family history of rheumatism, patient has herself greatly suffered from such, which has led to an anchylosis of right elbow and a possible slight valvular impairment. No lues, no arterio-sclerosis. Suffers at times from menstrual irregularities, and is not a very robust woman, but strong minded and cheerful so that recent domestic anxieties have not had any marked effect on her general health. Blood and urine normal. No history of eye trouble, vision always excellent.

Menstruated on December 22, 1905. Patient noticed on same day a cloudiness before right eye, and in looking into a light this appeared red. An oculist consulted gave the worst possible prognosis quoad visum, explicitly on account of the hemorrhage having occurred "into" the macula. Next day my examination yielded the following status. With fully 1.75 distant vision and normal tension in affected eye, patient has a positive central scotoma with straight horizontal lower outline and semicircular above—which figure she draws on paper. In looking at a window-pane, about 1 m distant, with a white house-wall, ca. 8 m off, as a background, the scotoma appears light red with green edges. One cm. perimeter test objects of Marx cloth, on black cloth without lustre, appear in good daylight at about reading distance as follows: Green like blue and blue as green, yellow is indistinctly recognized as such, and red as red,—the former objects have an edge of their true color around them, and so has white which appears reddish. Perimeter point-objects are not seen at all. The ophthalmoscopic examination reveals nothing abnormal, especially not regarding blood vessels, in the general fundus, but exactly in the macula is a light red hemorrhage about 1-3 pa. br. wide, of the same form as the scotoma, but reversed, i. e. straight border up. Above it are three small blood dots, and equidistant again above these is a small diffused shadowy hemorrhage at the end of a medium-sized vessel. This latter, the evident source of bleeding, appears clearly to be a branch of the main upper temporal artery. There are no reflexes from the macular region. At the next consultation, 4 days later, patient states that the scotoma has lost its regular sharp form and has got a "sort of handle" to it, and correspondingly the ophthalmoscope shows a picture in outline somewhat like a mushroom, with umbrella-shaped crown and stem, reversed, the hemorrhage now being of a brownish color with a few minute glittering dots in it. The explanation for this change is evidently that the several smaller extravasations have sunk down, and that in all the blood a process of absorption is already taking place. It still appears red subjectively, as before, under analogous conditions.

The eye has made an uneventful complete recovery in about 10 weeks, possibly a trace of negative scotoma remaining behind, and having become absolutely normal ophthalmoscopically. This state I have been able to reaffirm but some days ago, i. e. ca. 28 months after the occurrence of the hemorrhage.

Twenty-eight days after the sudden onset of the affection in the right eye, also promptly with returning menstruation, the left eye became similarly affected, only much more mildly so. There is only a negative scotoma and a slight tinge of greenish to the white and blue, and of bluish to the green, 1 cm., perimeter objects. A light appears reddish particularly with the head turned away and the eye directed towards it strongly inwards across the nose. The macula appears light red and uniformly dotted with some faint, regular, relatively large, round spots, slightly darker. Fovea reflex present. No source for the apparent hemorrhage was visible, and no other changes. This finding has gradually disappeared in about 7 weeks and this eye has also remained well ever since. L. vis. 1, 5 E.

Regarding the ophthalmoscopic features in the history just given, the smallness of the hemorrhage in either eye strikes us immediately, and that in the left the blood never formed itself into the supposed characteristic shape. I am inclined to think that the sparser the amount of blood in pre-retinal hemorrhage, the less important also the predisposing cause. I need scarcely point out that it is but too often far different with retinal hemorrhage proper. I have seen as a memento mori a retinal hemorrhage so small as to suggest in the inverted image almost the possibility of its being merely the darker spot you might notice at the crossing of two small vessels; 3 months later patient died of cerebral hemorrhage. Whilst, I believe, nothing is known in the pathology of rheumatism (re. vessels, etc.) which would help us to understand the etiology in this case, we might recur to the menstruation, and possibly some chlorotic condition. It is also worth while, I think, to bear in mind in future cases, the possibility of vicarious menstruation. Dr. J. Henry Barbat, to whom I am indebted for this patient, and I have thought that the simultaneous occurrence of hemorrhage and menstruation on two occasions might possibly be looked upon in that light. The feasibility of such a view seems well illustrated by the history of a young woman given by Dr. J. G. Huizinga who suffered from three attacks of hemorrhagic retinitis in three menstruations in immediate succession.*

I have already given it as my belief that in cases at least like ours of lesser extent hemorrhage and underlying cause may run parallel in relative importance. I would look upon this hemorrhage then as analogous to recurring slighter hemorrhages into the vitreous (in young men more particularly) where often a chlorotic condition also is rather assumed clinically than being exactly demonstrable, which hemorrhages by the way originate in the anterior parts of the uveal tract, not from retinal vessels. Finally I am led to think that pre-retinal hemorrhage may in milder form occur oftener than suspected, not even at every time being recognizable with the ophthalmoscope as pre-retinal. Careful

* The number of authentic cases of vicarious menstruation in the eye appears to be small (Cf. Groenouw, Graefe-Saemisch XI., 2 ed). Of such retinal hemorrhages Gr. only reports four by three authors, not giving the above case of Huizinga.

testing for central scotoma and with a light should, however, frequently aid in the exact diagnosis. Mine has certainly been an ideal patient making the perimetric test rather of the nature of an exact physiologic experiment. Still I rather wonder that in no contribution heretofore, as far as I am aware, the fact has been noted that, as a matter of course, the scotoma in the typical segment-shaped hemorrhage will be inverted to the form of its anatomical substratum** Haab (l. c.) refers to his sixth patient as being very intelligent and a good observer, hence it had been possible to ascertain that she had a scotoma that corresponded in form "exactly" to the hemorrhage. Only Obermaier has it more directly, in parts viz., that the perimeteric examination revealed for either eye a central scotoma with sharp "arch-like upper" border, there being a relative scotoma adjoining the absolute scotoma, downwards, corresponding to the upper transparent layer of fluid of the ophthalmoscopic picture.

In conclusion I wish to refer briefly to a few anatomical data that seem to be helpful for an understanding of the way in which the hemorrhage takes places. According to Marcus Gunn (quoted by Haab, l. c.) the hyaloidea is not as firmly attached to the retina in the macula as elsewhere. Rather plausible further is Dimmer's (l. c.) explanation. In the macular region according to Dogiel, Mueller's fibres frequently split into 2 or 3, some distance from the inner surface of the retina. The inner ends of these secondary fibres then, as they form the margo limitans, being much finer than the conical endings of Mueller's fibres elsewhere render it easier for a hemorrhage to break through at the macula.

REFERENCES.

1 Atlas d. Ophthalmoscopie Tab. VIII, fig. 2.
2 Graefe-Saemisch V. 1st ed.
3 Traite complet d'ophth. Tab. IV.
4 Deutschmann Beitrage Z. A., V.
5 Ibid., XV.

THE BACTERIOLOGY AND PATHOLOGY OF PLAGUE.

(With the Demonstration of Gross and Microscopic Specimens.*)

By WM. B. WHERRY, M. D., San Francisco, Bacteriologist to the San Francisco Board of Health.

It will be impossible to give a full account of this subject in the allotted time so I will simply review a few facts which physicians and epidemiologists must always have in mind.

The exhibit of microscopic specimens should impress upon your minds the morphology, size and staining peculiarities of *Bacillus pestis.* I would call your particular attention to the preparation showing the "coccoid" form of *Bacillus pestis,* as these very characteristic forms are often encountered in the tissues of both rats and human beings. The exact manner in which these coccoid forms are produced in the animal body is still an open question. They are undoubtedly involution forms but viable for they always produce acute plague in experimental animals. I accidentally discovered that they could be produced in guinea pigs by the injection of the involution forms of *Bacillus pestis* grown on salt agar. It is probable that the salt content of the tissues has something to do with their production as shown by ash determinations kindly made for me by Mr. Beaver and Mr. Hyde of the Chemical Laboratory of the San Francisco Board of Health. The spleen and gland from a rat showing these coccoid forms and from a plague rat showing typical bipolar bacilli were examined and the tissues of the former contained about 0.5 per cent more solids by weight.

The bacteriologic identification of the plague bacillus, apart from animal experiments, depends chiefly upon two tests: The production of typical involution forms on salt agar containing two or three per cent of pure sodium chlorid and upon the production of typical salactite growths in oiled bouilon.

Viability Outside the Animal Body—Like many other nonspored organisms *Bacillus pestis* is very susceptible to the destructive agencies of nature. Exposure to direct sunlight (on coverglasses) kills it in an hour. Dried up in organs, on clothing, or in soil it dies in 5 to 15 days according to temperature conditions. Exposure to 55°C. (moist heat) for 15 minutes is fatal. One to 1000 bichlorid of mercury kills it immediately; and 5% carbolic in one minute. Like many other micro-organisms it may be frozen to many degrees below zero (Centigrade) without injury.

Pathogenicity—The plague bacillus is pathogenic to a number of animals besides man. In considering the susceptibility of animals it will be well to separate in your minds those that have been observed to acquire the disease *naturally* from those that may be infected *artificially,* e. g. by the injection of massive doses.

Among the rodents plague naturally occurs among the Norway rats (*M. Rattus*); the Egyptian roof rats (*M. rattus alexandrinus*); mice (*M. musculus*); the *Nesokia Bengalensis*—small bandicoots in India, closely resembling the Norway rat; the tarbagan (*Arctomys Bobac*) a rodent, related to the marmot, which inhabits the mountains in East Siberia and is also found in the Himalayas where epidemics of plague are said to decimate them. (Clemow. *Joun. Trop. Med.,* Feb. 1900.)

The observation of Liston that epizootic plague may run through guinea pigs gave the last Indian

** The image of an outer object upon the retina is an inverted one, and the object is seen erect by a psychical process. In the language of Helmholtz we see the sun and stars an den Himmel not an dem Himmel, on to or into, not upon or in the sky. All retinal sensations are projected outwardly to the opposite side of the visual field, as is easily demonstrated by the simple experiment of pressure phosphene. If one presses the globe at the nasal side its bearer will experience the sensation of light (or dark) on the temporal side. It follows that entoptic phenomena originating behind the nodal point (in the sense of the reduced Donders' eye) are experienced outside of the eye inverted to their cause, and speaking teleologically there would seem to be no reason for a psychical act of reversing. Clinically the matter has not been used. I have tried in suitable cases, e. g. of grotesque vitreous opacities, to find in the outlines of the positive scotoma, as drawn by the patient, the contour of the ophthalmoscopic picture reversed, but have failed—evidently, the shadow from the formations as anticipated upon the retina from the frontal aspect is still largely modified by their corporeal structure posteriorly.

*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

commission one of its most valuable means of studying the manner in which plague spreads through an Indian village. According to J. A. Thompson marsupials acquire the disease in Australia. (*Jour. Hyg.*, 1906, 6, 549.) Several species of monkeys naturally acquire it. Cats may develop a chronic form with cervical buboes. Rabbits and squirrels are susceptible to inoculation but I am unaware of any authentic observation of a natural epizootic among them. Recently (1907) Biffi of the University of Lima has shown that the llama is susceptible to inoculation and dies in eight days with characteristic lesions.

Wilm (1896-7) claimed to have transmitted plague to many of man's domestic animals by feeding experiments; and in 1903 Simpson made a series of experiments to show that pigs, hens, calves, ducks, geese and sheep can be infected by feeding with the organs of animals dead of the disease. An analysis of the work of these experimenters shows that they failed to distinguish between the hemorrhagic septicemias of animals and plague.

Bannerman repeated Simpson's experiments in India (1904) and Hill in Natal (1904) and both failed entirely to convey plague to any of the domestic animals.

Mode by which the Plague Bacillus Gains Entrance into the Animal Body—Infection in man occasionally occurs through inhalation, resulting in primary plague pneumonia. Still more rarely by rubbing infective material through an occupation or an accidental wound. But most important of all is the rubbing of infective material into the atrium afforded by a flea bite. It will be necessary here to briefly summarize the findings of the last Indian commission on this point. (*Jour. Hyg.*, 1907, 7, No. 3.)

1. Both male and female rat fleas may take up as many as 5000 bacilli from the peripheral circulation of a plague-infected rat.

2. The bacilli multiply within the flea and such a flea may pass out large numbers of virulent germs with its feces during ten to fifteen days after infestation.

3. Fleas have a well recognized habit of defecating while sucking blood and this, in the case of a plague-infested rat flea, results in the deposition of infective material near the site of its bite.

4. A flea bite has been shown experimentally to be a sufficient atrium of infection.

While the majority of the Indian commission's experiments were performed with the rat flea *Loemopsylla cheopis*, they also made two experiments with another rat flea *Ceratophyllus fasciatus* and both of these were successful. All of twenty-seven experiments with *Pulex felis*, the cat flea, failed. Only three out of thirty-seven experiments with the human flea (*Pulex irritans*) were successful and this low percentage was explained by the fact that human fleas do not thrive well upon rats and guinea pigs.

Pathology—At the necropsy table we make distinction between three main types of the disease in man.

1st. Primary bubonic plague; most frequent of all.

2nd. Primary septicemic plague.

3rd. Primary pneumonic plague.

When plague bacilli gain entrance into an infection atrium of the skin, very rarely they first localize there giving rise to a primary plague pustule of the skin which when fully developed closely resembles an anthrax carbuncle. This is shown very well by the specimen on exhibit from the case of Max P. E.

In the vast majority of cases, however, the bacilli are carried directly by the lymph stream to some of the superficial regional lymphatic glands. If their progress is arrested here, the further multiplication of the bacilli gives rise to the *primary bubo* which is characterized by an intensely hemorrhagic inflammatory process with a consequent fusing of adjacent glands, and the pouring out of a plastic serogelatinous exudate into the peri-glandular tissues.

When this invasion of the glandular tissues is of a comparatively mild grade and the further progress of the bacilli is arrested we speak of the case as one of *pestis minor*, or clinically, if accompanied by few symptoms, as one of *mild* or *ambulatory plague*.

However, if the bacilli in the glands of such a bubonic case pass the lymphatic filters the patient suffers from a *secondary septicemia* with or without a *secondary plague pneumonia*.

When plague bacilli on their way from an infection atrium are not arrested by the regional glands and make a rapid entrance into the circulation they give rise to *primary septicemic plague*.

When infection is acquired through close association with a primary or secondary pneumonic case, the type produced is usually one of *primary plague pneumonia*.

The anatomical changes may be briefly summarized as follows:

The postmortem rigidity and lividity are usually marked. Small petechial or ecchymotic hemorrhages into the cutaneous tissues or under the serous membranes, particularly of the lungs, heart, kidneys, cerebral and spinal meninges may be found. Submucous hemorrhages may also be present in the stomach, intestines and bladder. These submucous and subserous hemorrhages are very well shown by the kidney and stomach on exhibition.

However, it should be remembered that while such petechiæ are often present in primary and secondary septicemic plague, they also occur in other diseases,—notably in cerebrospinal meningitis, tick fever, typhoid and typhus fevers, beri-beri, and in some cases of severe streptococcus, pneumococcus and *bacillus mucosus capsulatus* infections. The primary bubo has been described. Many of the lymphatic glands may be infected through the blood stream giving rise to buboes of the second order. These are not as congested nor as hemorrhagic as the primary bubo and the glands in a group are not fused together.

The internal organs show the usual changes accompanying many acute bacterial infections, such

as: splenic tumor; acute nephritis; congestion of the liver; myocarditis, often with dilatation; congestion of the brain and cord; and hyperemia and swelling of the bone marrow. In pneumonic plague the lungs present the picture of a typical confluent lobular pneumonia, are blackish red and very hemorrhagic on section and microscopically show enormous numbers of typical bi-polar staining bacilli.

Types of the Disease in Rats—Rats may have either acute or chronic plague. In acute rat plague the most important signs are: the presence of a typical bubo; of a liver showing small yellowish foci of necrosis; and hydrothorax. Marked subcutaneous congestion and noticeable enlargement of the spleen may or may not be present.

Hitherto, with the exception of Hunter who described an intestinal form of chronic plague in rats, most observers have found the chronic lesions in the form of abscesses either in the spleen or connected with the spleen or a lymphatic gland. In our experience with a few cases of chronic plague in rats in San Francisco the lesions have always been in relation to the spleen or a gland.

THE OPTHALMO-TUBERCULIN REACTION.*

By EDWARD F. GLASER, M. D., San Francisco.

This is a brief report on the limited observation of in all 39 cases, some from the Fruit and Flower Mission Clinics and a few private office cases. We have used chiefly Vicario's, the French Solution of Tuberculin, it being self evident important to have a reliable and standard preparation.

The Vicario's is a 1% watery solution or more properly speaking suspension of tuberculin, i. e. briefly, the tubercle bacilli or fragments of them, destroyed by heat, precipitated and purified by alcohol and dissolved or suspended in a watery solution.

Vicario's 1% solution is sometimes called the No. 2 solution in distinction from a No. 1 solution which is ½% solution recommended by Calmette, sent out from the Pasteur Institute and put up by Poulenc Freres. The tuberculin can also be obtained dry in small cells sent out from the Lille Pasteur Institute, to which it is directed to add a certain amount of water to make a ½% solution and half that amount to make a 1% solution. Parke, Davis & Co., send out the tuberculin in the form of compressed tablets which are directed to be dissolved in a certain amount of distilled water.

The technic is very simple. With the patient's head tipped slightly backwards, a drop is instilled into one eye alone (the other being used as a control); preferably instilled at the inner angle of the eye into the conjunctival sac or on the caruncle and the lids kept apart for a few minutes to avoid the expulsion of the drop by the involuntary closing of the lids. Where one has several patients to try it on at one time, a convenient and economical method is to draw up the requisite number of drops from the containing ampulle or little bottle into a hypodermic syringe and then inject as it were, exactly a drop upon the conjunctiva of the eye.

As stated before the 1% solution was generally used except in patients under 15, when the ½% was employed, although as an experiment the 1% solution was used on a non-tuberculous child 4 years old without producing any redness or irritation and also the 1% solution in a tuberculous child of 6 years produced no excessive reaction, and in the case of a suspect 11 years of age in which one drop of the ½% solution was negative, a week afterwards two drops of the 1% solution instilled into the other eye produced also absolutely negative results.

Many recommend the use of the ½% solution in all cases and then in the absence of a reaction the instillation later of the 1% in the other eye, but as with care to the eye no troublesome conjunctivitis has appeared, it would seem better in adults to use the 1% solution, rather than to have the doubt which might follow the nonreaction to a ½% solution.

For accurate observation, the condition of the ocular and palpebral conjunctiva and of the caruncle should be carefully noticed before the instillation. In our list of cases the earliest showing of the reaction was about 2 hours, between 5 and 6 hours after the instillation being the average; about 12 hours was the latest appearance, although the literature speaks of appearances 48 hours after the instillation. The presence of the reaction is indicated by a shiny, bright redness over the caruncle and the lower palpebral conjunctiva and generally an injection of the lower and inner quadrants of the ocular conjunctiva, showing there as a network or tracery of blood vessels. A couple of hours after the appearance of this congestion, on drawing down the lower lid, there may be found strings of grayish fibrinous exudate and over the caruncle this, with muco pus, may form what almost looks like a membrane. The caruncle is generally slightly swollen, and sometimes the lower lid. The subjective symptoms may be almost nothing as in one case in which the patient gave a most typical reaction yet said that he felt no difference, up to another case with only a doubtful reaction, who complained of such distress that he said that he was afraid he might lose his eye; but surely his pain must have been imaginary.

Generally the subjective symptoms are lacrymation, some photophobia, slight smarting or scratching of the lower lid as though there might be a little dust in the eye, the lids stick together in the morning, and, with abundant secretion, some slight disturbance of vision. But as a rule the subjective symptoms are not annoying. The after treatment consists in cautioning the patient about rubbing the eye, keeping out of wind and dust and use of boric acid solution. In no case have we bandaged the eye. The reaction disappears in from 2 to 10 days. The filaments of fibrinous exudate and muco pus are not found much after the first 24 hours of their appearance. A summary of the 39 cases shows 7 clinically tubercular cases gave positive reaction; 8 suspects gave positive reaction; 2 luetic gave positive reaction; 2 clinically tubercular gave doubtful reaction; 2 suspects gave doubtful reaction; 9 suspects gave nega-

* Read before the San Francisco Society of Eye, Ear, Nose and Throat Surgeons.

tive reaction; 7 promiscuous cases gave negative reaction; 2 luetic cases gave negative reaction.

The cases called doubtful were those in which there appeared a slight redness which passed away in 24 hours or sooner, but with no secretion apparent at least when the eye was observed.

In these 4 cases with doubtful result there was not an opportunity given to repeat the test. In 4 of the suspects giving negative reaction the drop was repeated in the other eye with negative results and in one case repeated for the third time in the eye first used, without any reaction.

In the two luetics who gave positive reaction, no tubercular focus was found. The ophthalmo tuberculo reaction may be positive in syphilis and certain stages of typhoid; still it has not been proven in these cases that there was not some hidden tubercular focus.

The counter indications to the use of tuberculin in the eye are existing disease of the eye or its appendages; still as an experiment we used the 1% Vicario's solution in two cases, one of catarrhal conjunctivitis following an attack of grippe and the other a case of blepharo-conjunctivitis, without any reaction and without having any appreciable influence on the pre-existent disease.

Eye strain from refractive errors does not counter-indicate the use of the tuberculin, as the known varied refraction of the patients showed. Age did not seem to make any difference, the patients varying from 3 to 61 years.

As to any serious lesion or disturbance to the eye as a result of using the opthalmo reaction, we have seen none, the attending congestion and conjunctivitis disappearang entirely in all our cases within, at the latest, ten days, leaving no ill effects. I believe a Frenchman, Dr. La Personne, in one of the French journals speaks of a commencing phlyctenular conjunctivitis in a child resulting from applying this test, but otherwise I know of no trouble.

In none of the cases have we seen the cornea or the iris in any way affected even in the height of the reaction, nor have we seen any resulting trouble with the lachrymal apparatus. As to what causes this reaction, the most plausible theory at present seems to be that the fragments of tuberculin dropped into the eye are caught and retained in the meshes of the loose conjunctival tissues and there acted upon not by the tubercle bacilli of the tuberculous person, but by the anti-bodies, formed by the patient having reacted to the tuberculous infection. These anti-bodies acting upon the tuberculin produce a resulting substance which is an irritant and causes the local inflammation.

Now to a specialist this is all not very important, beyond perhaps his knowing the effects to the eye in the application of the test, still as we are not expected to be general diagnosticians may not this give us a test that we can in certain cases legitimately use?

For example, Johnny A., 4 years old, February 6th, tonsils not enlarged and very little adenoid tissue in vault of pharynx, left ear with no pain, shows perforations in lower anterior quadrant of tympanic membrane and a whitish mucous discharge, which in the hands of two aurists at different times had readily yielded to treatment, only to break out again when the child had what is termed a cough or cold. The discharge examined bacteriologically was non-tubercular, but the opthalmo-tuberculin reaction was decidedly positive, so besides treating the ear the child was sent with a note to the family physician, who found an evolvement of one lung and has the child under treatment.

Another Johnny was a man 30 years of age who came to have his throat examined and said that he always had been told that his lungs were all right. Besides treatment for nose and throat we dropped a drop of tuberculin into his conjunctival sac, producing a marked reaction, with a result that his family physician is now sending him to Southern California.

Alice H., aged 14 years, has one brother with tuberculosis and herself pronounced to be in an incipient tubercular stage, but a repeated instillation gave no reaction, so about a month ago we removed enlarged tonsils and adenoids and her doctor has been attending to her nutrition and hygiene, with the result that she is already vastly improved and is at present out of her incipient tubercular state.

Now, as to the exact value of this eye reaction, it is perhaps yet too early to estimate exactly, but in our limited experience comparing the results of the test with the findings clinically it seems marvelous to strike the mark, to indicate the cause when tubercular, and is thereby a great aid especially where there is some focus of doubtful infection. And as the early diagnosis of tuberculosis is of the greatest importance, any aid should at least receive our careful attention and although none of the reactions can take the place of a careful examination of the patient and finding of definite clinical symptoms, still, a positive reaction may be of great aid in confirming the clinical findings or may point the way to determining the infection.

I have not yet had the opportunity to use this test in an attempt to make differential diagnosis in any eye disease.

Dr. Nagel discussing paper read by Dr. Glaser I think that of late the enthusiasm has somewhat subsided with regard at least to the absolute harmlessness of the reaction. In some clinics in Germany, I think, I have seen lately where many individuals have been subjected to the tests an ophthalmic surgeon has taken charge. When this thing is done in a haphazard way it has been found that troubles of the eye have been aggravated so that one ought to be at least careful in inspecting the eye thoroughly beforehand. Apart from that practical point I was interested in Dr. Glaser's remark that one case had developed phlyctenula. This reminded me of an experience of Professor Foerster's, some years ago, when he tried to decide whether phlyctenula is a symptom of a lymphatic condition of the system. He experimented with mechanical and chemical agents and satisfied himself that it was sufficient to produce phlyctenula in a lymphatic individual. If this test is looked upon as an absolute proof of tuberculosis, that would bring us near the old idea that lymphatic conditions and tuberculosis are very closely related.

THE HOUSING PROBLEM.*

By TITIAN COFFEY, M. D., Los Angeles.

A few words in regard to tenement house problems may seem out of place on a Pure Food Symposium program, but when you stop to think for a moment how unavailing all attempts at food betterment become in the face of squalor, filth and poverty, you will see I think, that my topic has a somewhat vital bearing upon the issue to be discussed this morning.

I wonder how many of you realize in the full sense that both San Francisco and Los Angeles are facing and have been for some years, a housing problem? I have been amazed in Los Angeles at the ignorance of the intelligent classes over our local conditions. The common remark is, "We have no slums, we have no tenement house problem. Why this agitation?" Ah, that is just the mistake. Those unfamiliar with existing conditions have in mind only, when "tenement house problem" is mentioned, a vision of the huge structures, swarming with human beings, as typified by the tenements of New York, Philadelphia and Chicago. They entireily overlook the cottage of three or four rooms that, owing to city growth and congestion has passed from the type of a home, housing one family to that of the tenement where the ordinary cottage is made to house two, three or four families. This is the beginning of the tenement house problem; this is what inevitably comes to any city of any size as the natural sequence of increased population and the development of industries. This is what we call a housing problem and is what the two great cities of California are coping with.

I am not so familiar with the local conditions of San Francisco as I am with those of Los Angeles so I will quote a few lines recently received from a prominent social worker in the north to give you an idea of what has been started there: "Immediately after the fire, improper buildings were erected in large numbers all over the city. By the failure of the Governor to sign the Tenement Bill the opportunity for putting up such structures was extended many months. It was the revelations of some of the conditions being created in the new San Francisco that aroused public interest in the municipal ordinance, presented by the Social Science Committee of the Diocese of California. In flats at Bay and Leavenworth streets about 600 persons were living in a building that covered less than 2-3 of a block. If all apartments had been occupied, there would have been over 800. Not far away on the corner of Montgomery and Lombard, 70 persons were crowded in a low building, 30 by 70 feet."

Los Angeles is peculiar in that not only has she had to deal with over-crowded and insanitary conditions in the small cottages among the rapidly increasing foreign population, but within the past 6 or 7 years there has developed the "Cholo Court." By this I mean the ordinary city lot 50 by 150, let out in sections to a number of Cholos, for which they pay a ground rent of $1.50 to $3.00 per month and are allowed to construct their own houses. These ignorant and poverty stricken Mexicans, working as day laborers on the street car systems for a wage of $1.50 per day, construct their houses of any old thing that comes handy, their favorite material being dry goods boxes, old tenting and scrap sheet iron. Anywhere from ten to twenty families would crowd on a lot, making the total population say between fifty and sixty. One water faucet and probably one toilet sufficed for all. In one court consisting of ten 40-ft. lots, the population was between four and five hundred. Time forbids that I should enter into more detail, so I will hurry to my conclusion.

What is being done to rectify and better these conditions? San Francisco passed an ordinance July 31, 1907, called "The Tenement House Law," covering the construction of tenements in the city and county and seems a good ordinance as far as it goes if it be rigidly enforced. Los Angeles two years ago created a Housing Commission to study local conditions. So far we have spent all our time on the House Courts as they seemed at that time to be our worst problem. An inspector has been furnished by the Board of Health, who devotes all his time to the work. We had about 88 courts a year ago, housing over 2000 people. Some 10 have been entirely wiped out; of the remainder, some have been vacated and not reopened, all have been materially improved and 5 new courts, meeting the requirements of our local ordinance, passed in February, 1907, have been established.

In closing I wish to outline three necessities for the carrying on of this work in an aggressive manner.

1st. The establishment of a State Tenement or Housing Commission to be non-political in its appointments, supplied with necessary funds to investigate and institute needed reforms. Local Commissions can do something toward bettering local conditions, but the work is so far reaching and of such vital importance from a sanitary standpoint that it should be in the hands of a representative board so as to cover the requirements all over the state.

2nd. The importance and advantage of employing female inspectors instead of male inspectors. This has proven eminently successful in New York, Philadelphia, Chicago, and Yonkers, N. Y. The latter city was the first to go on record ten years ago by employing a woman inspector on the Board of Health and the results have been amazing.

3rd. An aggressive campaign of public education to teach the people, especially the property owners, that improved housing conditions do not work a hardship on the property owner, but are an out and out practical business proposition and a paying investment for capital. New York, Boston, Philadelphia, Chicago and other cities have proven this in the past five years, beyond the question of a doubt.

* Read as part of a Symposium on Pure Food and Public Health at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

BERI-BERI.*

By PROF. A. LE DANTEC.

Translated by COLBY RUCKER, M. D., U. S. P. H. & M. H. S.

Beri-beri is a disease of alimentary origin characterized from the anatomical viewpoint by the existence of peripheral neuritis; from the clinical viewpoint by disturbances of sensation, and mobility and trophic changes.

Many etymologies have been given for the word beri-beri. Here are those which seem the more likely: According to Marshall, bhayree signifies weakness in Ceylonese and is redoubled to express a high degree of weakness; Kerklots makes the derivation of beri beri from the Hindustani word bharbari, edema; finally, Carter noticed that beri-beri often attacked sailors, and therefore thought it probable that the word came from the Arabic, bhur bahri, marine asthma.

The word barbiers has been employed for a long time in the French language as a synonym for beri-beri. It seems to be an alteration of the word barber which the English use to designate the disease. At the beginning of the century, Marshall tried to divide it into two disease entities, the paralytic form or barbiers, the hydropic form or beri-beri.

In Japan they give to the disease the name kakke, which signifies a weakness and tedious heaviness of the limbs. In Cochin-China the Anamites call it Binh thang, swelling disease, Mac thang, seized with swelling. In the Antilles beri beri is known by the name "sugar mill disease"; in the Dutch East Indies, by the name Loempac.

History.—Beri-beri was first noted by the Dutch in their colonies in the Sunda Islands. Later, it has been studied in English India by Malcolmson, Carter and Morehead, in Cochin-China by Vergniaud, Philipp, Corre and Gayet, in Malaysia by Vaan Leent and in Brazil by Silva Lima.

The European physicians residing in Japan, Baelz and Scheube, have definitely established that beri beri is a peripheral neuritis. Finally, the question of pathogenesis remains undecided and it is a question whether beri beri is an infectious neuritis or an alimentary toxic neuritis.

Geographical Distribution.—The geographical distribution of beri-beri is very extensive, but the principal centers of endemicity are India, Dutch East Indies, Indo-China, Japan and Brazil. The disease has been noted on the West Coast of Africa (Senegal, Congo, etc.), in Madagascar and in Oceanica (Australia, New Caledonia and the Sandwich Islands). It is very probable that its distribution is even more extended, and that finally its existence will be noted in other regions, for example, the center of Africa.

Possibly there have been beri-beri epidemics in certain asylums for the insane in Europe and America. At the insane asylum in Dublin, there was observed one after the other, three epidemics of a disease which resembled beri-beri very closely (1894, 1896, 1897). It was the same in an epidemic which struck the insane asylum of Tuscaloosa (United States) in 1896. Finally an epidemic broke out in France in the Asylum for the Insane of Saint-Gemmes-sur-Loire, which has been described by Chantemesse and Ramon. These two authors diagnosed it as beri-beri.

Pathological Anatomy.—From the anatomical viewpoint, beri beri seems to be an ascending neuritis, accompanied (sometimes without) by edema of the limbs and degeneration of the myocardium. We have, therefore, to describe the lesions which one finds in the peripheral nerves, the central nervous system, and the heart. We will omit, as presenting nothing peculiar in beri-beri, the edema of the limbs and the extravasations into the various serous cavities of the body.

(a) Peripheral Nerves. The lesions of the peripheral nerves have been described by Baelz and Scheube. They were for a long time undiscovered because a special technic is required to place them in evidence. The best technic to be followed consists in removing a segment of the nerve in the region which was paralyzed. One maintains the nerve in extension by a match which is placed parallel to the length of the nerve, care being taken that it does not touch the wood. To one extremity the nerve is attached by means of a ligature the other extremity being held by a forceps; a second ligature is used to fasten it to the other end of the match. The nerve and the match thus resemble the bow of a violin. The nerve thus prepared is placed in a 1 per cent solution of osmic acid. In about twenty-four hours the dissection is made which permits one to observe the characteristic lesions of peripheral neuritis.

In the rapidly fatal cases, one observes the signs of a veritable Wallerian neuritis, that is to say, the following lesions: In all the interannular segments one sees in the sheath of Schwann a multiplication of the nuclei of the protoplasm, a segmentation en boule of the myelin sheath and a deformity of the axis cylinder. The axis cylinder is at first moniliform. Later it becomes segmented at the contractions and finally disappears completely.

In chronic beri-beri, one encounters the segmentary periaxial type of neuritis. In this case only some of the interannular segments are altered, whence its name of segmentary. These segments are found between normal interannular segments. In the pathological interannular segments are to be found instead of a proliferation of the nuclei, an invasion of the sheath of Schwann by the leukocytes. The myelin instead of being en boule, as in the Wallerian neuritis, is transformed into a fine emulsion which gives it a granular aspect, as if it were sprinkled with sand. In Wallerian neuritis the lesion begins at the middle portion of the interannular segments. In periaxial neuritis they always begin at the ends of the segment, i. e., near the annular constriction. The axis cylinder, at least in the beginning, remains normal. As is to be seen this neuritis certainly deserves the name of periaxial segmentary neuritis given to it by Gombault.

(b) Central Nervous System. In order to study microscopically the cerebro-spinal axis it must be divided into small sections which are fixed by a solution of formol 1-10. In that portion of the central nervous system contained in the spinal canal, lesions are not constantly met with. Ordinarily there is an hydropic condition of the subarrachnoidal space. The spinal cord is sometimes softened at the level of the cervical and dorsal enlargements and in its lower third. Brazilian authors have noted the presence of ecchymotic spots at the points of exit of the spinal nerve roots. There has been but little microscopical examination of the spinal nerve axis. Baelz has seen degeneration in the cells of the anterior horns and embryonic infiltration around the central canal. In the wet form there is to be seen in the cranial cavity, congestion of the meninges and an increase of the cerebro-spinal fluid.

(c) Myocardium. The heart is one of the organs most constantly affected by beri-beri. It swims in a serous effusion and when removed from the pericardium the fingers sink into it as into a soft body. Its color is yellowish, the color of a dead leaf; on opening the cavities no lesion is seen on the valves. The right ventricle often contains soft clots which are sometimes fibrinous. Microscopical examination shows a granulo-fatty degeneration of the muscle fibre.

Besides these principle lesions several accessory lesions have been noted. Thus Baelz and Wernick

* Read before the Santa Clara County Medical Society.

have seen granulo-fatty degeneration of the gastrocnemei and solei muscles. The liver is often hypertrophied and the spleen markedly congested, the splenic capsule having ecchymotic spots scattered over it. The blood is blackish and sticky. Shaken in the air it reddens easily. The red blood count is diminished.

Etiology.—(a) Malarial Origin. The malarial origin of beri-beri has been advanced by certain physicians of India and Java. To this are opposed a great number of objections of which the most important are, the absence of the hematozoa of Laveran in the blood of patients; the outbreak of certain epidemics of beri-beri on the high seas, far away from malarial country; and finally, the sensitiveness of the colored races to beri-beri in opposition to their resistance to malaria.

(b) Intestinal Parasitic Origin. Some authors, Giles in particular, have thought that beri-beri was a primary cachexia due to the presence of the ankylostome in the intestine of the patients. Walker, in the north of Borneo, found the ankylostomum duodenale in 85.5 per cent of cases, the trichocephalus in 31.5 per cent.

We have seen in studying the diarrhea of Cochin-China how frequently the helminths occur in the digestive tract in warm countries. These worms never cause symptoms analogous to the polyneuritis of beri-beri.

(c) Infectious Origin. A number of authors consider beri-beri as a true infection, that is to say, as due to an invasion of the organism by bacteria. Various varieties of micro-organism have been incriminated: bacilli (Ogata), spirillae (de Lacerda), cocci (Pereira Pekelharing, Foi); hematozoa resembling the protozoa of malaria (Grogner, Fajardo). The authors most competent to judge have noted the absence of a specific microbe in the cadavers of beri-beri patients. Thus, Baelz and Scheube have sought the micro-organisms of beri-beri, but have never discovered them. Simond, who has studied beri-beri at Poulo-Condor for some time, has not been able to discover any organism in the viscera, the central or peripheral nervous system.

We must, therefore, consider beri-beri as a disease which is probably not microbic. In all the cases completely studied in the asylum epidemics, organisms have been easily found.

We will summarize the work of Chantemesse and Ramon upon the epidemic of Saint-Gemmes-sur-Loire because the two authors have compared the disease which they studied to beri-beri of warm countries. (Ann. Ins. Pasteur, 1898.) At the autopsies of two subjects dead of the epidemic, Chantemesse and Ramon have isolated from the cephalo-rachidian fluid, the liver and the spleen, an organism sometimes in pure culture, sometimes associated with a coccus or colon bacilli. The following are some of the characteristics of this bacillus: It is motile, it clouds bouillon, forms an almost imperceptible film on the surface of the liquid, does not take Grams, liquefies gelatine, coagulates milk, gives upon potatoes a brownish culture in a few days.

The bacilli injected into a rabbit's ear produced locally a dry eschar followed by paralysis of the posterior tract, which is succeeded by paralysis of the anterior tracts, death occurring on the twelfth to the fifteenth day. At autopsy a meningo-myelitis with an exudation containing the bacilli in pure culture is found. The toxin preferably from a bouillon culture freed from the organism produces the same paralysis, death occurring in a few of the cases.

(d) Toxic Origin. Some authors think that the beri-beri paralysis, instead of being due to a parasite attacking the entire organism, is attributable rather to the absorption of a toxin excreted by a microbe. This microbe, according to some, multiplies in the digestive tract; according to others, its habitat is the ground. Thus, according to Manson, in all the endemic foci of beri-beri, the germ of the disease lives in the soil or the houses; there it distils its poison, which, absorbed by the patients, produces a polyneuritis exactly as if they had taken alcohol. The parasite of beri-beri acts on the soil exactly as yeast acts on a solution of sugar. The earth would be, according to the English author, the habitat of the parasite, and man, living on its surface, would be intoxicated but not infected. The Japanese believe, also, in the telluric origin of the disease and they give a very simple reason for it. "The disease," they say, "is proven to be from the earth because it begins in the legs." In spite of all the authority of Manson, we would not subscribe to this manner of production. This arises from a multitude of objections, the chief of which is that a large number of epidemics have broken out on the high seas, far from all telluric influence.

(e) Alimentary Origin. For a long time it was remarked that beri-beri attacked exclusively those peoples which have rice for the base of their alimentation. Thus this grain has been held to be the cause of the disease. We will study the role of rice in the genesis of kakke, besides, we will see if we have reason to believe that it is an intoxication caused by the alteration of this grain as is the case in pellagra, or if it be due to poisoning produced by the too exclusive use of the same food as is the case in lathyrism.

First Proposition.—On board emigrant ships, beri-beri attacks the passengers having the native ration and respects the crew and the passengers having the European ration. On board emigrant ships the coolies are fed with rice and salted fish and they alone are attacked by beri beri, while the European crew, who are fed on bread and meat, do not present a single case of the disease.

If perchance there are among the coolies individuals who for one reason or another are fed the European ration, the disease does not attack them.

The epidemic on the "Parmentier" in 1862 is a remarkable example of the selection made by beri-beri from a number of people. The "Parmentier" left Martinique to return to India 401 coolies at the expiration of their contract in the Antilles. Three months after the departure of the ship an epidemic of beri-beri appeared on board, which obliged the captain to put in to Mauritius in order to save their lives. The beri-beri disappeared during the voyage across the Indian Ocean. A commission appointed at Pondicherry to investigate the origin of the epidemic found that the European crew did not have a single case of beri-beri, and that among the coolies those who escaped the disease were the following: The cooks, three or four natives employed by the sailors and who received supplementary food, and those who took with them certain provisions, such as tamarinds, preserved fruits, etc.

Second Proposition.—The modification of the alimentary regime is the best measure to be taken to prevent or arrest an epidemic of beri-beri.

Nowadays we do not see epidemics of beri-beri on board emigrant ships because of the modification of the rations served the coolies. Similarly in Japan, where beri-beri formerly attacked almost the entire navy, the disease has quite disappeared since barley and bread have been substituted for rice in the dietary. The Dutch navy has obtained the same results in the colonies in the East Indies.

We thus see that the alimentary origin of beri-beri seems to be clearly established, but it is necessary to determine the nature of the food capable of producing these results. Here there is great divergence of opinion.

The cause is salted fish. Some authors maintain that salted fish is responsible. This is the opinion

of Graal, who has observed an epidemic of beri-beri among the Annamites and Japanese in New Caledonia. Meyer claims that in the Dutch East Indies the troops in the field are attacked with beri-beri because the dietary consists largely of salted meat. One may cite as against this hypothesis the fact that many epidemics of beri-beri occur among patients who have not eaten any sort of meat.

The cause is white or shelled rice. According to Eykmann, a badly preserved rice does not give rise to the disease in the proportion that the fresh rice does. Therefore, we cannot hold the disease due to an alteration of the alimentary material. According to this, beri-beri would be due to the consumption of white or shelled rice. This was found to be the case in a minute investigation which the Dutch physicians have made in the prisons of Java and the French expeditions have had the same experience. Eykmann produced paralysis in chickens which were fed on white or shelled rice. Red rice, or the non-shelled (named thus because of the red pellicle with which it is covered) does not produce this result.

The disease develops with surprising regularity in chickens fed on ordinary rice, either raw or cooked. In about three or four weeks the paralysis manifests itself first by a reeling gait and increase in the rapidity of the pulse. Soon the animal seems to be in pain, finally it falls and is incapable of rising and lies upon its side. A few days after the chicken is stricken with the disease it is impossible for it to either eat or drink. This is produced by the intense dyspnea, the respiration becomes noisy, the crest and the skin take on a cyanotic hue, the temperature falls and the animal dies from the second to the fifth day after the beginning of the disease.

(To be Concluded.)

ADDRESS OF DR. KREUTZMANN UPON THE OPENING OF THE NEW GERMAN HOSPITAL.

Ladies and Gentlemen:—I hope you forgive me, when I say, I am proud. I am proud indeed to welcome you in the new German Hospital, in this magnificent building, which is a monument to the architect, Mr. H. Barth, and his staff, to the mechanics and working men. It is a credit to the men in and outside the board of directors of the German General Benevolent Society, who have labored for years under the greatest difficulties; think of the disaster and the financial crisis! It is a credit to the medical men, who have given their time and thought in planning the hospital. But this new hospital is the crowning success to all this labor. Not only is the building safe, spacious and airy, it is equipped and provided with everything to accomplish successful medical treatment. There is an old saying among physicians: "a cure should be 'cito, certe et jucunde.'" Certainly the conditions in this new hospital are such that it will be possible to restore patients to health quickly, safely and if not exactly agreeably, at least not disagreeably. You have seen the kitchen, this important factor in a hospital; the splendid arrangement to convey the food to the patients, to keep food and dishes warm. We have besides such a fine body of nurses, whose presence alone is bringing comfort to the patients.

We are going to move into this great building in a few days, and the rooms and facilities of the hospital will be open to the medical profession. It behooves well on this occasion to say a few words more to you as colleagues. I know well that there exists among the profession an ill feeling against the German Hospital. Some would like to call it "unfair house," and there is talk about contract practice. Now I am connected with this German General Benevolent Society, and the German Hospital for eighteen years, and I have seen a few things during that time inside and outside the hospital.

There was a time when patients were admitted not only to the German Hospital but to other hospitals as well, who paid a few dollars and had for this the hospital maintenance, medicine, nursing and the doctor's service with operation when necessary all thrown in the bargain. This sort of a thing could not last; by patiently working, aided by the progressive majority of the directors, step by step we abolished this, and for some time now the practice has been established, that patients are paying the hospital for maintenance only, for medical service they have to make their terms with the visiting physician.

There still exists the reproach that the German General Benevolent Society is doing objectionable lodge practice; true, there are well to do people in this great German General Benevolent Society, who are not ashamed to take all they can get out of the society. They are on the same line with those who go to free dispensaries, which are meant only for the deserving poor. These things are hard to avoid, dispensaries are a necessity; such societies as the German General Benevolent Society are a necessity and this very German General Benevolent Society, which can look back for more than fifty years, has done an enormous amount of good in general charity work and in its hospital during that time.

I am fully convinced from my past experience, that progress will be made and steps will be taken to weed out anything really objectionable to the medical profession. Such a magnificent institution as this German Hospital must be standing on the highest principles of medical ethics; it cannot exist in any other way.

I again wish to thank you in the name of the board of the directors of the German General Benevolent Society and in the name of the hospital staff for the interest you have shown in the hospital by coming here to-night and we invite your co-operation without prejudice to the end that the new German Hospital may be a factor in the advancement of medical knowledge and a home for the cultivation of the noble art of healing.

SANTA CLARA COUNTY.

The regular Society meeting was held at San Jose Aug. 19th, with twenty-five members present. The guests of the Society were Dr. W. C. Rucker, U. S. P. H. S.; Dr. Boxmeyer, Dr. Benepe, Dr. Jessie Simpson and Dr. La Breck. Dr. John McMahon read a report of a case of Pyelo-Lithotomy. Dr. Rucker gave a paper on Beri-Beri. Dr. Rucker's paper was a translation on the subject by Dr. Le Dantec of France. Drs. Snow and Boxmeyer reported on the Typhoid Situation at Palo Alto. The Society granted Dr. Hindman of Morgan Hill, a transfer to the Los Angeles Society. After a general discussion of the papers presented, the Society adjourned to the banquet hall where a delicious repast was served.

K. C. PARK, Secretary.

SONOMA COUNTY.

The regular Society meeting, held at Petaluma Aug. 13th, 1908, was a good one. Dr. J. H. McLeod in the chair; Drs. W. J. Kerr, G. W. Mallory, J. C. Condit, W. C. Shipley, A. R. Graham, Smith McMullin, S. Z. Peoples, visitors; Dr. J. E. Maddux and Dr. Ed. Southerland of San Diego, and Dr. Winslow Anderson. Dr. Anderson's subject was Dysmenorrhea-Etiology, Pathology, Symptoms and Surgical treatment.

The Doctor reduced the subjects to five heads:

I. Neuralgic,
II. Congestive,
III. Obstructive,
IV. Ovarian,
V. Membranous.

Of most importance is diagnosis. Caution—never use sound in office unless ready to operate.

I. Neuralgic-et-Neurasthenia, neurotic parents. Rheumatism of uterus. Late menstruation. The ovaries enlarge three times its usual size at menstruation.

Symptoms: Cramps, shooting, excruciating pains about time of menstruation; second or third day of menses they lessen. If rheumatism, give the Salicylates or guvacol. If chlorosis, build them up. If neuralgic, give sedation. Salin purgative to move bowels. No operation for this trouble.

II. Subinvolution; result of abortion. When you order a douche have patient use at least one gallon of the solution.

III. Antiflexion, retroflexion. Pressure by overdistended bladder. Constipation.

Symptoms: Pain as in labor, always an endometritis.

Treatment: Dilate and straighten uterus and use a stem.

IV. Encysted ovary, no cure except removal. Etiology, usually gonorrhea.

V. Etiology unknown; symptoms, membrane comes away. Patient can never get pregnant. The laity think the menstruation of these unfortunates are abortions. The doctor should protect these patients.

Dr. Anderson was given a hearty vote of thanks by the Society after which the Petaluma boys banqueted us at the hotel. Some of our wives attended banquet.

The following resolution was passed by the Society:

That we ask the Governor to appoint as delegates any who may contemplate going to the International Congress on Tuberculosis, Washington, D. C., Sept. 21st to Oct. 12th, from our Society.

The Governor, his excellency, James N. Gillett, has appointed Dr. J. W. Jesse, who is past President of our Society and health officer of Santa Rosa, a delegate to said Congress.

We are indeed glad to announce that our Society has among its members the progressive, wide awake and never failing ones. That is good reason why every doctor should belong to some County Society.

G. W. MALLORY, Secretary.

PUBLICATIONS

Light and X-Ray Treatment of Skin Diseases. By Malcolm Morris, F. R. C. S. Ed., Dermatologist to King Edward the Seventh's Hospital for Officers, Surgeon to the Skin Department of the Seamen's Hospital, etc., and S. Ernest Dore, M. D., Cantab., Assistant in the Skin Department of the Middlesex Hospital. W. T. Keener & Co., Chicago, 1907.

This little book contains a summary of the methods of application and results of Finsen's light treatment, X-rays and other therapeutic agencies which have been introduced in the dermatological practice within the last ten or twelve years. Conclusions of the authors are based largely on personal experience, and the aim has been not to give records of "cures," but to set forth, in their light, the facts which they have observed, and to help the reader to form an accurate estimate of the value of the several methods described. The larger portion of the work is devoted to a discussion of the advantages and disadvantages of the light treatment, originated by Niels Finsen, more particularly with reference to its application to the treatment of lupus. There has undoubtedly been a good deal of exaggeration by many authors as to the curative effects of the light treatment. This has necessarily frequently resulted in much harm, and particularly to disappointment on the part of sufferers. The position of the writers with regard to this matter is well stated in the following quotation: "Speaking as one who during more than twenty-five years has tried all methods having the sanction of professional authority or appearing to rest on a scientific basis, I can say that the light treatment has, in my hands, produced results on the whole superior to those which I have obtained by any other. Not a few cases are, however, met with in practice in which it can not be applied, and even when it can be applied it often fails to effect a thorough cure. Even when the disease is to all appearance healed, the cure is not often lasting. I think it right to state the conclusions to which our experience had led Dr. Dore and myself, all the more plainly because the natural tendency to exaggerate the curative virtues of a new remedy has in some quarters led to the expression of what seems to me an unduly optimistic opinion of the efficacy of Finsen's method."

The use of the X-rays is also fully described, and the restrictions from the therapeutic standpoint are well emphasized. This is probably one of the most clearly written and reliable monographs published at the present time. A. J. L.

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. E. B. Treat & Company, N. Y., 1908.

This is the twenty-sixth volume of Medical Annual. In it is to be found an excellent summary of the year's progress in practical medicine, more particularly from the therapeutic standpoint. From a perusal of the section on Serum-Therapy, it may be seen that interesting and useful advances have been made in this department; here we find references to the autoserum, described by Gilbert in the treatment of pleurisy, and favorably commented upon by Jona; an account of the various antidysenteric sera used by Ekschivan and Stepansky, Vaillard and Dopter, and of the new polyvalent serum of Coyne. The preparation and use of Behring's Tulase is also discussed, as is also the experience of Eber and Heymans' with Behring's procedure. Accounts of other forms of tuberculin employed by Bernaneck and Denys and Marmorek may also be found. The chapter on "Opsonins and Vaccines" contains an excellent, although brief, discussion of the technic employed for the determination of the opsonic index.

Two other excellent chapters, one devoted to the value of fecal examinations in chronic diseases, the other to treatment by passive hyperemia, are suggestive. The year's progress in radio-electro therapy is well summarized in a special chapter. Among a host of other subjects discussed, we single those on the treatment of diseases of the blood vessels, especially aneurism by surgical methods, the direct examination of the larynx, trachea, bronchi and esophagus, the treatment of spinal meningitis by Flexner's serum and the determination by exudates and transudates of the pressure in the subarachnoid space. Part 3, the concluding portion of the volume, contains a brief review of the more important advances made in the sanitary sciences during the past year. A. J. L.

Applied Physiology. A Manual Showing Functions of the Various Organs in Disease. By Frederick A. Rhodes, M. M., Professor of Physiology and Embryology, Medical and Dental Departments of the Western University of Pennsylvania. Medical Press, Pittsburg, Pa., 1907.

This small volume of about 200 pages is primarily intended for students, who will find it to contain, in tabulated form, an exposition of the most impor-

tant and frequent symptoms of diseases. It is based on our knowledge of pathological physiology, and here and there important physiological laws of value from the practitioner's standpoint have been emphasized. The reading of this book will, no doubt, contribute to sounder knowledge of the student of elementary medicine. A. J. L.

Frederick Baumann, Ph. D., M. D., Professor of Genito-Urinary Diseases in the Reliance Medical College and Instructor in Dermatology and Venereal Diseases in the College of Physicians and Surgeons, Chicago. D. Appleton & Company, New York and London, 1908.

This excellent, small volume on the diagnosis and treatment of gonorrheal affections of the lower genito-urinary tract reminds the reviewer of the small monogram on special topics published in Europe. Largely based on the writings of Oberlaender and Kollmann, the author has well succeeded in presenting a concise, scientific account of the pathology, diagnosis and treatment of the common forms of gonorrhea. Very properly, emphasis has been laid on the importance of an accurate diagnosis; and urethroscopy is clearly and interestingly described. The section on the instruments used in the treatment of gonorrheal infiltration is sound and illuminating. Almost one-half of the book is devoted to the treatment of these affections, and from our review of this portion we find that the accounts are in accord with the practice of the best authors on the subject to-day. The vaccine therapy of gonorrhea is, of course, merely touched upon experience at the present time being too limited to form any definite conclusions. A. J. L.

The Commoner Diseases of the Eye. For Students of Medicine. By Casey A. Wood, M. D., C. M., D. C. L., Professor of Ophthalmology, Northwestern University, St. Luke's Hospital and Wesley Hospital, Chicago, etc., and Thomas A. Woodruff, M. D., C. M., L. R. C. P. (London), Ophthalmic Surgeon, St. Luke's Hospital and St. Anthony de Padua Hospital, Chicago, etc. Third Edition, W. T. Keener & Co., Chicago, 1907.

The former editions of this book have been so favorably commented upon in the past that the task of the present reviewer merely consists in a reiteration of the excellence of the present volume. In this new edition, the third one, several new chapters, fully illustrated, have been added on the physiology, histology and gross anatomy of the orbit and its contents. Other changes have been made in the text to enhance the value of the work to the general practitioner. The importance of the nasal and neighboring cavity affections in the diseases of the eye is fully recognized, as shown by the excellent chapter contributed by Dr. Frank Brawley.

In conclusion, we may say that we know of no better work of this kind published in the English language. A. J. L.

Treatment of Internal Diseases. By Dr. Norbert Ortner, of the University of Vienna. Edited by Nathaniel Bowditch Potter, M. D., Visiting Physician to the New York City Hospital, to the French Hospital, and to the Hospital for the Ruptured and Crippled, Instructor in Medicine, Columbia University. Translated from the fourth German edition by Frederic H. Bartlett, M. D.

There are so many books on treatment that the appearance of a new one is apt to pass more or less unnoticed. Ortner's work is, however, certain to become as popular in this country as it is in Germany and Austria (with both students and practitioners). Ortner has done more than compile a list of the various drugs used in any given disease; he has done more than publish a list of his favorite prescriptions, as would appear at first glance. His therapy is rational; he gives reasons for selecting his drugs, and sharply defines the indications for each. But the features which distinguish his book from many of those now in use are the paragraphs devoted to the mechanical hydrotherapeutic, climatic and dietetic methods of value in the various diseases discussed. And these are just the points too often neglected by the average practitioner, who usually fails to enlighten his patients on these most important matters, which can often be of more real value than the drugs he is prescribing. Ortner has kept his work up to date, which is quite a feat considering the great advances made in pharmacology within recent years.

Potter, in editing the English edition, calls attention to the profusion of prescriptions in the book, but is not at all backward in adding a few more, and throughout the text numerous brackets are placed, where he encloses his views. They make the reading matter rather difficult, and in most instances have not at all enhanced the value of the book. An exception to this is the chapter on the use of the so-called salt-free diet in nephritis, which will be instructive to those who have not followed the recent work of the French school along these lines. R. B.

Bradycardia and Tachycardia, With Complete English Abstracts and Foreign Bibliography. Part II. In a Series of Monographs on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Professor Edmund Von Neusser, Professor of the Second Medical Clinic, Vienna; Associate Editor of Nothnagel's Practice of Medicine. Authorized English Translation by Andrew MacFarlane, M. D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College, etc. E. B. Treat & Co., New York, 1908.

Professor Neusser is one of the world's foremost clinicians, but it is in diagnosis that he particularly excels. In demonstrating a case, he usually takes up each symptom in turn, discussing the various possible causes of each one and working up a differential diagnosis on this groundwork. Then only does he approach the physical examination of the patient. What a contrast with the methods one is accustomed to see employed by our recently graduated physicians, who evidently reflect the modern scientific trends in teaching. With them a careful physical examination, coupled with exhaustive laboratory investigations, seems to suffice. But it is only by training men to pay careful attention to subjective, as well as objective details, that Neusser has built up a school of diagnosticians.

In the little book of 150 pages, but with the above imposing title, he has given us the various causes of increase and decrease of the cardiac action, a knowledge of which is absolutely essential to every physician. A simple enumeration of etiological factors would be rather tiresome reading, but here again Neusser has allowed his pen to run on just as if he were lecturing, and case histories are briefly outlined to illustrate his points, with the result that we soon realize how often we have been neglecting a very valuable diagnostic and prognostic sign in the simple, as well as in the severer, diseases we daily encounter. R. B.

PUBLIC HEALTH EXHIBIT.

Our members will long remember the fine exhibit of the Pure Food Commission at the Coronado meeting. At that session the Commission was made permanent, and its title changed to the Public Health Committee. The exhibit compiled by the Committee was sent to Sacramento, where it attracted a good deal of attention—as well it should—for it was a splendid and illuminating piece of work.

BOARD OF EXAMINERS, AUGUST SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percent.
Coll. of P. & S., L. A., Cal	6, 26, 08	81.8
Coll. of P. & S., L. A., Cal	6, 26, 08	77.8
Coll. of P. & S., L. A., Cal	6, 26, 08	77.0
Coll. of P. & S., L. A., Cal	6, 26, 08	76.3
Coll. of P. & S., S. F., Cal	5, 14, 08	78.8
Coll. of P. & S., S. F., Cal	5, 14, 08	75.0
Cooper Med. Coll., S. F., Cal	5, 5, 08	88.1
Cooper Med. Coll., S. F., Cal	5, 5, 08	85.0
Cooper Med. Coll., S. F., Cal	5, 5, 08	84.6
Cooper Med. Coll., S. F., Cal	5, 5, 08	84.5
Cooper Med. Coll., S. F., Cal	5, 5, 08	84.4
Cooper Med. Coll., S. F., Cal	5, 5, 08	84.2
Cooper Med. Coll., S. F., Cal	5, 5, 08	83.8
Cooper Med. Coll., S. F., Cal	5, 5, 08	83.6
Cooper Med. Coll., S. F., Cal	5, 5, 08	81.9
Cooper Med. Coll., S. F., Cal	5, 5, 08	81.1
Cooper Med. Coll., S. F., Cal	5, 5, 08	80.7
Cooper Med. Coll., S. F., Cal	5, 5, 08	80.6
Cooper Med. Coll., S. F., Cal	5, 5, 08	80.4
Cooper Med. Coll., S. F., Cal	5, 5, 08	80.3
Cooper Med. Coll., S. F., Cal	5, 5, 08	79.5
Cooper Med. Coll., S. F., Cal	5, 5, 08	79.5
Cooper Med. Coll., S. F., Cal	5, 5, 08	78.6
Cooper Med. Coll., S. F., Cal	5, 8, 07	78.6
Cooper Med. Coll., S. F., Cal	5, 8, 07	77.6
Cooper Med. Coll., S. F., Cal	5, 5, 08	76.9
Cooper Med. Coll., S. F., Cal	5, 8, 07	76.6
Cooper Med. Coll., S. F., Cal	5, 8, 07	76.0*
Cooper Med. Coll., S. F., Cal	5, 5, 08	75.7
Cooper Med. Coll., S. F., Cal	5, 5, 08	75.0
Hahnemann Med. Coll. of the Pac., S. F., Cal	5, 21, 08	75.4
Hahnemann Med. Coll. of the Pac., S. F., Cal	5, 21, 08	75.0
Oakland Coll. of Med. & Surg., Cal.	6, 1, 08	75.9
Univ. of Cal., S. F., Cal	5, 12, 08	90.1
Univ. of Cal., S. F., Cal	5, 12, 08	85.1
Univ. of Cal., S. F., Cal	5, 12, 08	83.1
Univ. of Cal., S. F., Cal	5, 12, 08	82.3
Univ. of Cal., S. F., Cal	5, 12, 08	81.0
Univ. of Cal., S. F., Cal	5, 12, 08	80.8
Univ. of Cal., S. F., Cal	5, 12, 08	80.7
Univ. of Cal., S. F., Cal	5, 12, 08	80.5
Univ. of Cal., S. F., Cal	5, 12, 08	80.2
Univ. of Cal., S. F., Cal	5, 15, 07	79.2
Univ. of Cal., S. F., Cal	5, 12, 08	78.4
Univ. of So. Cal., L. A., Cal	6, 18, 08	84.3
Univ. of So. Cal., L. A., Cal	6, 18, 08	83.5
Univ. of So. Cal., L. A., Cal	6, 18, 08	82.6
Univ. of So. Cal., L. A., Cal	6, 18, 08	82.0
Univ. of So. Cal., L. A., Cal	6, 18, 08	82.0
Univ. of So. Cal., L. A., Cal	6, 18, 08	81.3
Univ. of So. Cal., L. A., Cal	6, 18, 08	81.1
Univ. of So. Cal., L. A., Cal	6, 18, 08	81.0
Univ. of So. Cal., L. A., Cal	6, 12, 02	80.0
Univ. of So. Cal., L. A., Cal	6, 18, 08	79.3
Univ. of So. Cal., L. A., Cal	6, 18, 08	78.1
Univ. of So. Cal., L. A., Cal	6, 18, 08	78.1
Univ. of So. Cal., L. A., Cal	6, 18, 08	76.5
Univ. of So. Cal., L. A., Cal	6, 18, 08	75.8
Harvard Med. Coll., Mass	6, 28, 05	75.8
Jefferson Med. Coll., Pa	5, 8, 08	80.3
Jefferson Med. Coll., Pa	6, 8, 08	78.8
N. W. Univ. of Ill	6, 4, 08	77.4
N. Y. Homeo. Med. Coll., N. Y	5, –, 08	75.1
Ohio Med. Univ., O	4, 16, 03	76.7
Rush Med. Coll., Chicago, Ill	3, 28, 93	87.8
Univ. of Mich	6, 27, 95	92.2
Univ. of Mich	6, –, 96	84.8
Univ. of Mich	6, 25, 91	78.6

* Condition in Pathology removed Aug. '08.

Applications to take the examination were rejected:

Coll. of P. & S., S. F., Cal, 5, –, 05 and 5, –, 06.

Failed.

Cal. Med. Ecl. Coll., Cal	5, –, 06	65.9
Cal. Med. Ecl. Coll., Cal	5, 17, 05	63.6
Cal. Med. Ecl. Coll., Cal	5, 16, 06	48.5
Coll. P. & S., L. A., Cal	6, 26, 08	73.9
Coll. P. & S., L. A., Cal	6, 26, 08	70.8
Coll. P. & S., L. A., Cal	6, 26, 08	70.0
Coll. P. & S., L. A., Cal	6, 26, 08	69.9
Coll. P. & S., L. A., Cal	6, 6, 06	69.4
Coll. P. & S., S. F., Cal	5, 14, 08	72.6
Coll. P. & S., S. F., Cal	5, 14, 08	72.5
Coll. P. & S., S. F., Cal	5, 17, 06	69.6
Coll. P. & S., S. F., Cal	7, 26, 02	69.3
Coll. P. & S., S. F., Cal	5, 14, 08	68.9
Coll. P. & S., S. F., Cal	5, 17, 06	68.0
Coll. P. & S., S. F., Cal	5, 14, 04	65.1
Coll. P. & S., S. F., Cal	5, 14, 08	60.8
Coll. P. & S., S. F., Cal	1, 25, 02	59.9
Coll. P. & S., S. F., Cal	6, 6, 07	57.5
Coll. P. & S., S. F., Cal	5, –, 06	46.4
Cooper Med. Coll., S. F., Cal	5, 5, 08	71.7
Cooper Med. Coll., S. F., Cal	5, 8, 07	71.6
Cooper Med. Coll., S. F., Cal	4, 28, 03	61.0
Hahnemann Med. Coll. of the Pac., S. F., Cal	5, 21, 08	73.2
Hahnemann Med. Coll. of the Pac., S. F., Cal	5, 21, 08	70.2
Hahnemann Med. Coll. of the Pac., S. F., Cal	5, 21, 08	62.9
Hahnemann Med. Coll. of the Pac., S. F., Cal	5, 21, 08	61.4
L. A. School of Osteopathy, Cal	6, 11, 08	66.3
Univ. of Cal., S. F., Cal	5, 12, 08	70.2
Univ. of Cal., S. F., Cal	5, 12, 08	67.6
Univ. of So. Cal., L. A., Cal	6, 18, 08	75.1
Univ. of So. Cal., L. A., Cal	6, 18, 08	73.6
Univ. of So. Cal., L. A., Cal	6, 18, 08	73.3
Univ. of So. Cal., L. A., Cal	6, 18, 08	72.5
Univ. of So. Cal., L. A., Cal	6, 13, 07	71.9
Univ. of So. Cal., L. A. Cal	6, 13, 07	71.6
Univ. of So. Cal., L. A. Cal	6, 18, 08	71.1
Univ. of So. Cal., L. A., Cal	6, –, 05	69.7
Univ. of So. Cal., L. A., Cal	6, 13, 07	69.4
Univ. of So. Cal., L. A., Cal	9, 3, 04	69.3
Univ. of So. Cal., L. A., Cal	6, 18, 08	68.0
Univ. of So. Cal., L. A., Cal	6, 18, 08	57.5
Amer. Sch. of Osteopathy, Mo	6, 4, 08	57.7
Amer. Sch. of Osteopathy, Mo	6, 4, 08	49.3
Amer. Sch. of Osteopathy, Mo	6, 14, 06	29.3
Baltimore, Md. Coll., Md	5, 23, 06	65.3
Central Coll., P. & S., Ind	3, –, 86	66.2
Illinois Med. Coll., Ill	1, 2, 08	9.9
Jefferson Med. Coll., Pa	6, 8, 08	74.1
Jefferson Med. Coll., Pa	5, 15, 95	46.7
Kentucky Sch. of Med., Ky	6, 18, 91	72.9
Keokuk Med. Coll., Iowa	5, 26, 08	58.3
Louisville Med. Coll., Ky	3, 25, 97	71.7
Louisville Med. Coll., Ky	4, 11, 05	64.0
Med. Chir. Coll., Kansas City, Mo	3, 19, 03	48.5
Medico Chir. Coll. of Phila., Penn	6, 1, 06	65.7
Medico Chir. Coll. of Phila, Penn	5, 28, 04	46.4
Miami Med. Coll., Cin., O	6, –, 05	73.7
N. W. Med. Sch., Ill	6, 4, 08	66.8
Omaha Med. Coll., Neb	4, –, 02	65.9
Royal Univ. of Ireland	–, –, 88	80.0
Rush Med. Coll., Chicago, Ill	3, 19, 08	72.9
Rush Med. Coll., Chicago, Ill	2, 19, 89	69.0
Toledo Med. Coll., O	2, 14, 84	28.8
Tufts Coll. Med. Sch., Mass	6, 16, 05	48.3
Univ. of Copenhagen, Denmark	2, 21, 06	73.5
Univ. of Iowa	6, 12, 07	69.9
Univ. of Jena, Germany	9, 25, 68	73.8
Univ. Med. Coll. of Mo	5, 2, 08	72.9
Univ. of Mich	6, 26, 84	71.4
Univ. of Mich	6, –, 92	70.7
Univ. of Minn	2, 2, 04	69.2
Univ. of Penn	6, 13, 06	71.0

PROF. A. MARTIN'S VISIT TO SAN FRANCISCO.

A visitor of unusual interest to the medical profession of San Francisco, especially to the gynecologists, made quite a little stay amongst us recently; Prof. August Martin of Berlin, during his visit to the Pacific Coast, delivered several lectures at Prof. Somers' clinic in Cooper College; he also performed his "Kolpotome anterior" at the Lane Hospital and at the German Hospital. Those who had the good fortune to be present at both, his lectures and his operations, enjoyed thoroughly his performances.

August Martin came to America with a mission; medical men, especially surgeons and more especially gynecologists, are prone to have fads and our science seems to progress rather irregularly. There was a time, not very long ago, when it seemed the proper thing to do all gynecologic operations through the vagina. At the present time the pendulum has swung far over in the other direction, and vaginal operations are neglected!

Professor August Martin has done more than any other living gynecologist to develop vagino-abdominal operations. It was his mission to revive the interest for vaginal operations in properly selected cases. The technic of his "Kolpotome" certainly requires more operative training and skill than the average suprapubic abdominal section, but it undoubtedly has certain advantages in many cases.

ERRATA.

In the July issue, J. A. Wilson, moving from 2673 California street to the Ortman Building, should have been J. A. Wiborn. In September, S. S. Boyle was noted as dead. There is no one of that name. S. S. Bogle was incorrectly reported dead; he is alive and well.

NEW LICENTIATES.

Allen, Frances M.; Beebe, Lula June; Beetle, C. H.; Briggs, L. H.; Brown, A. A.; Bruman, A. K.; Buehner, G. O. H.; Buell, A. W.; Bunnell, S.; Burks, F. L. R.; Byron, R. L.; Cahen, E. M.; Callnon, J. W.; Carter, W. E.; Chapman, Florence P.; Cook, C. W.; Devine, C. T.; Devore, Bertha L.; Dozier, E. D.; Eversole, H. O.; Falk, E. V.; Feeley, M. A.; Finley, T. G.; Friedberger, W.; Fuller, R. N.; Gouguet, J. L. E.; Grant, W. L.; Hamlin, F. A.; Harries, J. B.; Hastings, S. W.; Holgate, C. E.; Holleran, J. F.; Holt, W. L.; Horstmann, E. H.; Hubbard, C. D.; Hull, F. E.; Jacobs, S. N.; Johnson, H. C.; Lewitt, F. C.; Luttrell, P. H., Jr.; Macleish, A. C.; Manning, W. R.; Mansfield, T. G.; Martinez, L. B.; May, H. C.; Meads, A. M.; Michelsen, L.; Newcomb, R. H.; Newman, L.; O'Brien, J. J.; O'Connor, T. H.; Opp, P. A.; Phelan, C. A.; Ragland, W. A.; Reynolds, L. G.; Robbins, I. W.; Runckel, G. H.; Seavey, Minnie A.; Shaw, F. E.; Standlee, C. E.; Sutherland, T. G.; Taubles, G. H.; Tolman, G. P.; Ward, E. D.; Warden, C. C.; Wilson, D. R.; Wright, H. J., Jr.; Zirker, D. W.

OCTOBER CHANGES.

CHANGE OF ADDRESS, TO SEPTEMBER 15, 1908, noted since the Register and Directory went to press.

Wakefield, Francis B., from 2609 California, to 1525 Sutter st.

McConnell, A. B., from 2609 California, to 1525 Sutter st.

Mills, Herbert C., from 2802 Grant st., Berkeley, to 1921a Francisco st., Berkeley, Cal.

Van Denburgh, John, from 2400 Pacific ave., to Schroth Bldg., San Francisco.

Tinsman, Chas. M., from Fall River Mills, Cal., to Adin, Cal.

Musante, A. Stephens, from Sacramento, Cal., to 1536 Stockton st., San Francisco, Cal.

Jackson, Josephine A., from 1971 Morton ave., to Sta. A, Pasadena, Cal.

Robarts, Harry P., from 31 Parnassus ave., to 240 Stockton st. (Schroth Bldg.).

Seeber, Cornelius W., from Union Trust Bldg., Los Angeles, to Wright & Callender Bldg., Los Angeles.

Case, C. L., from 1849 Dwinell st., Oakland, to S. W. cor. Webster and Edwards sts., Oakland.

Fay, Wilbert L., from Santa Rosa, to Forest Hill, Cal.

Conran, P. J., from 1548 McAllister, to 532 Devisadero st.

Fischer, Martin H., from Livermore, Cal., to 2061 Grove st., Oakland, Cal.

Sanborn, Fletcher G., from 22 Market st., San Francisco, to San Jose, Cal.

Hindman, S. J., from Morgan Hill, Cal., to Moneta and Slauson aves., Los Angeles, Cal.

Soegaard, E., from Rio Dell, Cal., to address unknown.

Stearns, Victor J., from 1345 Laguna, to 1825 Sutter st., San Francisco.

Kahn, Adolph J., from Behlow Block, Napa, Cal., to Migliavaca Block, Napa, Cal.

Smiley, Virginia W., from Carmel, Cal., to 1815 Vallejo st., San Francisco.

Lane, Lucia Maria, from Carmel, Cal., to 1815 Vallejo st., San Francisco.

Hembree, A. T., of Forest Hill, Cal., temporarily in New York.

Bennett, Laura B., from H. W. Hellman Bldg., Los Angeles, to P. O. Box 451, San Pedro, Cal.

Clark, Nannie C., from 722 W. 7th st., Los Angeles, Cal., to Auditorium Bldg., Los Angeles.

Watts, Herbert C., from Modesto, Cal., to 1606 Scott st., San Francisco, Cal.

Newmark, Leo, from 2400 Pacific ave., to Hotel Normandie, Sutter and Gough sts.

Cosgrave, Millicent M. A., from 1059 O'Farrell st., to 86 Post st., San Francisco.

McCarthy, Chas. F., from 2417 Washington st., to Powell Bldg., Ellis and Powell sts.

Gallagher, Jno. Joseph, from 2417 Washington st., to Powell Bldg., Ellis and Powell sts.

Swett, Wilbur M., from 2417 Washington st., to Powell Bldg., Ellis and Powell sts.

Dowdall, R. J., from 6 Raymond ave., to 12 Raymond ave., San Francisco, Cal.

Welti, Laurence, from Physicians' Bldg., Stockton, to Elks' Bldg., Stockton, Cal.

Peck, Allen H., from Betteravia, Cal., to Palo Alto, Cal.

Maine, Alva F., from Redwood City, Cal., to 6027 Telegraph ave., Oakland, Cal.

NEW MEMBERS.

W. V. Chalmers Francis, Lissner Bldg., Los Angeles.

Francis Rollin Percival, 2635 W. Pico st., Los Angeles.

Margaret M. Morris, Auditorium Bldg., Los Angeles.

Frank W. Simpson, 2446 Channing Way, Berkeley, Cal.

DEATHS.

Alameda County—**Jas. P. Dunn,** of Oakland.

Humboldt County—**S. F. Calhoun,** of Arcata, died in Oakland, Alameda County.

RESIGNED.

Verlin C. Thomas, San Francisco.

Himmelsbach, Wm., Monterey, Cal.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI NOV., 1908. No. 11

EDITORIAL NOTES.

Most remarkable, in more ways than one or two, was the International Tuberculosis Congress held in Washington during the closing days of September and the early days of October. The daily press has had quite a little to say of it—particularly of those things which seemed to present some sensational features. But where is the publication that has uttered a single word concerning the most significant phase of the whole Congress? One of the very first speakers asserted, after due and careful study, that tuberculosis cost this country a billion dollars annually; that 138,000 persons died of this disease alone, each year. Now those 138,000 persons must have had some medical attendant and most of them must have paid no small sum to the medical profession during the course of the disease. Not a trifle, by any means. Furthermore, it is a matter of long observation that at least one person in ten has tuberculosis at some time in his life and probably that proportion of people, the world over, die of it. And yet, we see physicians from all parts of the world gather in Washington to the number of probably nearly 5,000 and there discuss enthusiastically the most recent discoveries and methods that will tend to stamp out the disease. The wonderful altruism of modern medicine passes recognition by the press. Can one imagine the Steel Trust devoting its energies to showing the people how to get along without steel? Can imagination picture an aggregation of lawyers assembled to devise ways and methods by means of which litigation and the law's delays may be decreased? May one even picture an assemblage of clergymen perfecting a plan for universal salvation—without the necessity for supporting the churches? But the Tuberculosis Congress was the expression of the international effort of a single profession to cut off one-tenth of its income! In spite of which the people do not understand and are suspicious of our every effort. What is there about the medical profession that seems to put it so far beyond the understanding of the people that they will not see the truth? What is the matter with the editors of our lay publications, many of them men of remarkable intellect, that they fail to see the tremendous significance of such a gathering as the International Tuberculosis Congress? The assertion is made, apparently on good authority, that since 1880 the span of life has been increased six years. Has our profession, then, done nothing for humanity? And yet there are doubtless those who would say that the doctors keep 'em alive longer in order to treat 'em longer and so get more money! Ye Gods and little fishes!

REMARKABLE GATHERING.

At this time and distance it is not possible to review the very large amount of work accomplished at the Congress. Koch seems to have received a tremendous ovation, a reception only a trifle less marked having been extended to the other luminosities of the tuberculous heavens. Battle seems to have raged over the much-fought question of the identity or dissimilarity of human and bovine tuberculosis, with, apparently, the same old result—a difference of opinion. Great interest was evidently manifested in the newer diagnostic aids, the conjunctival and skin reactions, and doubtless in a short time we shall have items of great interest on these subjects presented for our consideration. The attendance was much larger than had been anticipated, some reports placing it at not less than 5,000. Our own State was well represented, some fifteen or twenty of our members having been present. One thing is certain; there is no more doubt as to the great interest in and value of these international congresses.

WORK OF THE CONGRESS.

If one takes a dispassionate birdseye view of certain present conditions in American medical life, he will receive a distinct shock. Let us assume—and the assumption will be near enough the fact—that there are in the United States 125,000 physicians and 250 medical journals. All of these journals are, supposedly, published for the benefit and in the interest of physicians. Hovering hungrily on the flanks of this band of 125,000 physicians, ninety-nine and a fraction per cent of whom are in no sense of the word business men—rather the reverse—we may observe another band, not of the medical profession (except in rare instances) but

IS IT DOLLARS?

living on it; these are they who make things which the physicians are to use in carrying out the daily work of their profession. Isolated, alone, conspicuously open to unfair attack, we note a small, a pitiably small, group of men who courageously stand between these two bands—the unbusinesslike professional men and the shrewdly businesslike ones who live by and upon them. This little group of unprejudiced scientific men say, in effect, to the manufacturer who wishes physicians to use his product: "What is this which you wish physicians to use? You know that of the 125,000 physicians in this country, at least 100,000 are too busy or too credulous to look into the truth of what you say about your product. We stand here for them and we wish to investigate your article and your statements so that you may not impose upon them; all that we ask is that you shall tell us, and through us the medical profession of the United States, the exact truth, that so lives may not be placed in jeopardy." All of which seems the acme of simplicity and one would imagine that, reasoning *a priori,* every one of the 125,000 physicians would cry out for joy and every one of the 250 medical journals would give hearty and sincere editorial endorsement of a policy that would so greatly help those in whose interests their publications are supposedly issued. But what are the facts? Alas! Of the 250 journals all but possibly 25 have attacked this effort to eliminate dishonesty and fiction, either positively and openly or negatively and secretly. Why? Can it possibly be that those who control these medical journals are blind to the truth of the exposures of frauds that have been revealed? Can it possibly be that they hold the prejudiced statement of the interested party of more value than the unbiased statement of a group of trained scientific men who have no ulterior object to accomplish? It would be absurd to credit them with such stupidity. There seems to be one only influence of sufficient weight and power to make men cast aside what they must know in their hearts is the truth and abide with what they must know *is false* and dishonorable—the almighty dollar. That which man will not do for wealth, has yet to be discovered. How long medical men will continue actively to perpetrate fraud on their fellows after their sin has found them out, no man can say; that they are now doing it, a dispassionate observation by any one will show. Truly, the present condition of the medical profession of the United States is anomalous in the extreme. And some organizations of medical men are no less anxious to be influenced toward the wrong than are single units, when it comes to taking the unsound and dishonestly earned dollars of the unscrupulous manufacturer. That is the pity of it.

AINT IT AWFUL!

When a real nice lady-like old party slaps you on the bare wrist and says, "There, now! You be good!"—aint it awful? When you're doing something you feel sure is right; when you're making a fight that you know is right; when you see the opposition to such a fight and know just exactly what inspires it and how rotten with debased and debasing commercialism the inspiration of the opposition is, is it not too bad to be chidden? It is, indeed it is. The management of your JOURNAL is in tears; it is going about in sack cloth and ashes; its wails may be heard resounding through the night and disturbing even the cat; for your JOURNAL has been scolded—slapped on the bare wrist! We had the temerity to say that those firms whose preparations we use should advertise in our JOURNAL and thus help along the fight for decency by aiding in its support. We went further and said that other things being equal we should use the goods manufactured by those who do advertise with us in preference to those of firms who do not aid us. That seemed a perfectly fair proposition and we have asked—and received—the support of a large number of our members on that as a platform. Furthermore, we have asked our members always to demand of the detail man, when he first enters the office, an answer to the question, "Does your house advertise in our JOURNAL? and if not, why?" Secondly, "Is your stuff approved by the Council? and if not, why?" These are simple things, but we think they are just and right. The *Medical World,* of Philadelphia, however, thinks this is perfectly dreadful! We should be ashamed! We are quite naughty! We are to be chid! We have been slapped on the wrist! "Aint it rotten Rosie?"

UTTERLY ABSURD.

That pestiferous publication, *N. A. R. D. Notes,* a small sheet representing the purely commercial side of pharmacy and one which some time ago urged druggists to "push" peruna and any other old patent medicine that offered a certain possible profit, has recently come out with another startling suggestion. From the issue of September 17th we quote the following:

> "'There is no necessity for the doctor to dispense except in cases of emergency, and when he quits it his druggist should be punished if he doesn't quit counter prescribing,' says an anonymous writer, and he is right, as far as he goes. But two wrongs never make a right. Is a druggist justified in counter prescribing because the doctor dispenses? There are decidedly two ways of looking at this question."

Was there ever a more pernicious suggestion! To encourage pharmacists in the illegal practice of medicine! And this from a publication representing the National Association of Retail Druggists. Can it be that that represents the attitude of any considerable number of pharmacists? We most sincerely trust that it does not. The duty of the physician is plain. It is his to relieve, if possible, the patient who calls upon him for professional assistance. Whether this relief shall come from an operation, from suggestion, from advice, from regulation of habit and diet, from baths, from drugs administered by the physician at the time, or given to the patient by the physician or prepared for the patient by the druggist upon the written order of the physician, are all immaterial questions; the one

essential thing is that the physician gives of his best for the relief of the patient. And now comes the druggist and says that the physician must confine his medicinal treatment of a patient to such things as are ordered through and prepared by the druggist. And further, that he, the untrained druggist without medical knowledge has the right to prescribe over the counter for the sick! No wonder that the N. A. R. D. is in sad straits; no wonder that it is discussing reorganization and such things in order to try and keep itself alive. If all the advice which this sheet has sent to its readers is of the same stripe as the morsel under discussion, its readers must have been urged to many illegal acts and must have been led into a good deal of trouble. This is pretty close to the acme of impertinence.

WHAT A DIFFERENCE.

Comparatively recently two new hospitals have opened in San Francisco; both have been created from the medical profession, but in ways that differ as the day from night. Doubtless none save those who bore the burden can know the work and the strain and the personal sacrifices of the few men who unselfishly wrought, out of nothing, the University of California Hospital. First a body of laymen—the Regents—had to be convinced that the modern method of teaching medicine requires a hospital with patients in it. The underlying and cognate sciences may be taught wherever there are good teachers and laboratory facilities; but medicine and surgery must be taught at the bedside and in the operating room. Next, the Regents convinced, probably reluctantly, the hospital itself had to be erected from practically nothing. A building was secured by transferring all the preliminary work to the departments at Berkeley, thus freeing the medical building at the Affiliated Colleges, which was then to be transformed into a hospital. Funds for the transformation were obtained from and by the faculty of the Medical School, and it was soon found that the building adapted itself to hospital purposes remarkably well; better, in fact, than had at first been imagined would be the case. A clear-cut illustration of the altruism of our profession, this giving by the faculty of their time, their work, their brains and their money for what could profit them nothing, but for what they knew to be right. Now consider the newly opened German Hospital; a magnificent building equipped from top to bottom with everything that a hospital should have—and remember that every stick and stone of it, every least or greatest thing in it, has been paid for by money taken from the pockets of the physicians of California. The German Hospital stands a monument to commercialism and greed and professional prostitution. The German General Benevolent Society, starting right and working for the good of the sick or destitute German poor, long since became one of the worst "dollar a month," medicine at "bargain counter rates" institutions in the United States. The list of the well to do, the rich and the very rich who, for their paltry dollar a month, have taken advantage of what originated for the aid of the poor, would make a startling showing. The reasonable and honest fees which these dollar-a-month patrons of the German Hospital should have paid to the various physicians of our state, have gone to the building of the German Hospital.

NOTABLE MEETING.

The last regular meeting of the San Joaquin County Medical Society was a notable gathering. The subject for discussion was "The Proprietary Evil" and it attracted the attention of the members to a marked degree. Elsewhere, the JOURNAL prints a letter that was sent to every member and a list of questions which was enclosed with the letter. This whole question is one of common sense. Are we, as a profession, to go ignorantly on our way, fooled and lied to by the manufacturer either in regard to the composition of his stuff or as to the wonderfully impossible things it will do? Are we forever to shirk a goodly portion of our duty and disregard the composition of the things we put into our patients? That we can not believe the statements of any single manufacturer in the United States, has been conclusively demonstrated by the revelations of the Council on Pharmacy and Chemistry. We can not believe the manufacturer, for he wants to sell as much of his stuff as possible. We can safely rely upon the dicta of the Council, for they have no motive save to extract the truth—generally painfully and unwillingly—from the manufacturer. The crux of the whole matter is in the one thing—accept nothing that has not been approved by the Council, unless it be the well known articles in the U. S. P. or National Formulary. The Lord knows there are enough drugs available in those three lists! It would be a very good thing for every County Society in the state to devote one or more evenings to a discussion of this question so that every member could come to a clear understanding of what it means and the harm he is doing by not following the rule to accept nothing not approved by the Council. Of course all the "published-for-profit" medical (?) journals put up a howl at the mere suggestion of this (because they derive their profits from the advertisements of things which the Council has turned down) and they say a lot about using your own judgment; being independent; throwing off the yoke, and trash of that sort that seems to please them. Your own judgment is not worth a tinker's dam. Your "independence" is merely playing into the hands of the commercial manufacturer. There is no yoke except the yoke of lies that the unscrupulous exploiters have forged and placed upon our necks. Are you a chemist to analyze the stuff put before you and know whether the composition is as claimed? Of course not. Have you the time, the opportunity or the knowledge to investigate the claims made and determine whether or not they are true? Of course not. Then what is it to be? Are you going to place more faith in the manufacturers' statements than in the findings of a scientific body like the Council? Don't be foolish. Wake up!

PLAGUE PANDEMIC.

That it is not well to pose as a prophet, particularly in one's own country, is an observation as old as recorded history. It is not surprising, therefore, that we do not see the scientific departments of our government uttering prophesies, save as they may be deduced by him who reads from the dry-as-dust compilations of mere facts or figures occasionally issued. From the Public Health and Marine Hospital Service comes a pamphlet of figures and bald statements of fact pregnant with the soul of prophesy.*

In 1894 plague escaped from the endemic Indo-Chinese focus in the province of Yunnan, China, and infected Canton and Hongkong. Six years later, in 1900, it had invaded 76 different places in 26 countries, and in 40 of these it was noted as epidemic. By the end of the next 7 years it had invaded 146 places in 48 countries and in 76 of these it was noted as epidemic. Since January of the present year it has appeared in a number of other places, and in our own country, Los Angeles is to be added to the list of points where the pest has appeared. In 14 years it has spread to every continent on the globe and is there fixed in spite of, in many cases, every effort that modern science and unlimited money could combinedly put forth to uproot it. These facts are intensely significant and that the disease will still further increase and spread, is a prophesy almost elemental. As yet we do not know of the existence of plague in our Eastern or Southern seaboard, yet a careful examination of the rat population has not been made and one may well be justified in looking forward to such an examination with a certain amount of dread of the story that might be revealed. Quarantine measures along this entire seaboard have been directed practically exclusively to the maintenance of careful watchfulness for human plague, and the rodent, the real menace, seems not to have been under surveillance. With a vermin-free individual infected with plague, there is practically no danger of transmission of the disease, for the pneumonic form is so scarce as to be negligable. Only in a vermin-ridden population is the human agency in transmission one to be considered. If we have learned nothing else from the recent work of the Indian Plague Commission, and the still more recent work in San Francisco, we have learned the true nature of the disease and its transmission and that all quarantine measures should be formulated and carried out with the single idea of rat quarantine and vermin destruction. It is high time, in view of the exceedingly rapid distribution of the plague over the world, and of the facts which have been demonstrated in the last few years' work, that our federal government extended its energies to a rat examination of the East and South, and that every seaport in that territory prosecute an active and reliable rat quarantine. No seaport in the world is without danger, for into any seaport a ship may come, and all ships carry rats some of which may have had the disease, in its quiescent, chronic form, for long periods of time. No other known disease offers so many curious variations in its epidemiology or is so terribly destructive of human life at one time and so insignificant in its ravages at others, without seeming rhyme or reason. There may be a quiescent period of years followed suddenly and inexplicably by a terrific epidemic. Fortunately, in spite of all that we do not know about the disease, the little that we do know serves to point out the road to protection. The handwriting is on the wall; shall we read it or complacently ignore it?

* The Present Pandemic of Plague. By Asst. Surg.-Gen. J. M. Eager.

WHAT IS IT TO BE?

What is to be the attitude of the medical profession, now fast learning the various ways in which it has been exploited and buncoed by the commercial manufacturer, toward the supposedly reputable pharmaceutical manufacturing house that voluntarily and intentionally goes into the patent medicine business? Shall we say that it is no concern of ours? Shall we quietly allow such a house to "play both ends against the middle?" Shall we aid the wanderer from the paths of plain and simple pharmaceutical manufacturing? That such questions are even now presenting themselves may be known to any one who uses his eyes to see and his mind to think with. For years we have looked upon the house of Frederick Stearns & Co. as one of the few really reputable and desire-to-be-decent pharmaceutical houses. And yet what is this house doing? Going straight into the "patent medicine" business direct and shamelessly. In innumerable places one may see "SHAC"—or Stearns Head Ache Cure—advertised to the laity. In street cars, displays in windows, etc., etc. This so-called headache "cure" is nothing more nor less than an acetanilide mixture and, according to the *Journal A. M. A.*, at least two cases of poisoning are chargeable to it. The same house is also going to the public with "Pam" for the dyspeptic and "Zymole Trokeys" for husky throats. What will it put out next? Is this the right sort of thing for a manufacturer, appealing to the medical profession for support, to do? It does not seem to be quite right, does it? There are some signs of an approaching condition of things in the medical profession when its members will say to the manufacturer, deal with us or the public, but not with both. Why not help that condition of things to approach? Why not assume that attitude toward Stearns? Is the house of Frederick Stearns & Co. in business to supply medicines for physicians or to treat the sick directly and illegally?

CANCER OF THE UTERUS. HOW MAY WE SECURE ITS EARLIER RECOGNITION?*

By W. FRANCIS B. WAKEFIELD, M. D., San Francisco.

Of all problems which confront the gynecologist this is the most important. It is one of the two most urgent surgical questions of the day; the necessity for earlier recognition of cancer of the stomach being the other. In both of them, to await the appearance of classical symptoms puts the patient practically beyond the pale of surgical remedy.

Whatever may be the true etiology of cancer, one fact is clearly demonstrable, and that is that chronic inflammatory induration is the most common exciting cause. It, therefore, is our duty to remove all chronic indurations in and about the uterus whenever such are discovered.

The uterus, particularly the vaginal portion of the cervix, is subjected to frequent trauma, and is, therefore, the common seat of inflammatory induration, which may, later, excite the epithelial cells to carcinomatous proliferation. It is of the very utmost importance, then, that traumatic lesions in the cervix, of sufficient severity to have produced chronic inflammatory surroundings, should receive appropriate surgical treatment. Here we are much handicapped by the fact that such lesions give rise to comparatively few symptoms. It is true that the chronic endocervicitis will give rise to leucorrheal discharge, but most women, and many physicians, regard leucorrhea as an unimportant discomfort that belongs naturally to women and with which they must simply put up. It is also true that the subinvolution of the uterus, which usually accompanies traumatic injuries to the cervix with their inflammatory results, will create local pelvic discomfort and general nervous manifestations, but here, again, the general opinion exists that these are natural penalties consequent upon motherhood. The result is, usually, nothing is done to relieve these local lesions which, though simple in themselves, are of most serious significance when considered in the light of their possible etiological connection with cancer of the uterus.

Even when cancer actually exists, it is often slow in producing any symptoms, and practically never produces the chain of so-called classical symptoms, viz., hemorrhage, malodorous discharge and pain, until it has developed beyond the reach of surgery as a possible curative agent. Speaking broadly, it may be said that hemorrhage is the only symptom present in the early stage of the disease; in the stage where radical surgery offers something. When a fetid discharge becomes a prominent symptom, considerable disintegration of tissue has taken place, the disease has, in all probability, progressed beyond the confines of the uterus, and surgical results are notoriously problematic. Pain, the direct result of the carcinomatous growth, is rarely ever present during the time when surgery can offer more than palliative results. If pain is present early in connection with carcinoma of the uterus, it is due to coexistent tubo-ovarian inflammation. Therefore, if we hope to offer thorough surgery, any material future to women afflicted with cancer of the uterus, we must do so at the time when some abnormal bleeding is the sole symptom, or, still better, before there is any manifest symptom directly due to the carcinomatous process.

In view of all that has been written during late years on the subject, it should be unnecessary to point out to the physician the importance of thoroughly investigating an excessive bleeding at or about the menopause. That it is necessary, however, is evidenced by the fact that women are constantly presenting themselves to the gynecologist with inoperable cancer, who give a history of having had irregular hemorrhages for months, concerning which they have consulted their family physician, who never made an examination, but relieved their mind with the assurance that such symptoms were frequently associated with the menopause, through which they were probably passing. When will the rank and file of the profession learn that excessive bleeding is never a symptom of the normal menopause; that it always is evidence of some pathologic condition; and that, in the vast majority of cases, it means cancer of the uterus?

Occasionally opportunity presents itself to discover the existence of cancer of the cervix before it is evidenced by any symptom, and we are astounded at the progress the disease may make even before it produces any bleeding. I have recently had a chance to study such a case. This patient came to be treated for mechanical faults resulting from injuries during childbirth. Among other things, the cervix was bilaterally lacerated, was the seat of chronic inflammatory changes, and presented on the middle of the anterior lip a small, sessile, papillary outgrowth about two centimeters in breadth and one centimeter in thickness. Clinically, the growth seemed to be a very localized affair, with very little induration in its immediate vicinity, and no palpable induration of the surrounding cervical or vaginal tissues. A small piece was excised for histologic study and proved, on examination, to be a squamous-celled carcinoma. Sections made through the entire length of the cervix, subsequent to removal of the uterus, showed the large lymph spaces just above the cervico-vaginal junction to be filled with squamous-celled masses. This is the point where the lymph radicals coalesce to form the main lymph trunks that pass out to the parametrium; and who can say that carcinoma cells were not carried beyond the confines of the cervix even at this early stage?

Cases studied thus early impress upon us the necessity for very early diagnosis if we are materially to prevent the present woefully large number of recurrrences and save the lives of the thousands of women who die annually as the result of cancer of the uterus in this and in every other populous country.

The following suggestions are offered in the hope

*Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

that they may lead to practical results which will be evidenced by the fact that the gynecologist and surgeon will see, in the future, a much larger percentage of cases sufficiently early to make surgical results promising:

1. Every woman should be examined by her accoucheur, after uterine involution has taken place, to ascertain if any material injury to the cervix has resulted from the labor; and if material injury is found, the cervix should either be repaired at once, or the patient required to present herself for examination once or twice a year, so that repair may be advised before the patient's future is menaced, should chronic inflammatory changes supervene.

2. All Chronic lacerations of the cervix with concommitant inflammatory sequelæ should be repaired at once; all chronic inflammations of the cervical or corporeal mucous membrane should receive appropriate treatment; all interstitial or submucous tumors of the uterus should be removed.

3. Physicians should keep themselves constantly mindful of their responsibility in the matter. A small piece of tissue should be excised from any suspicious-looking patch on the cervix and subjected to histologic study, even though no symptoms pointing to cancer are present. All abnormal hemorrhages should be thoroughly investigated and, if no cause is evident on ordinary examination, the uterine cavity should be thoroughly curetted and serial sections made of the pieces of mucous membrane thus obtained, in an effort to prove or disprove the presence of adeno-carcinoma of the body or upper cervical canal.

4. Women should be educated to understand that danger attends the neglect of cervical injuries and chronic uterine inflammations; that every woman who has borne children may have such injury or such inflammation; that it would be wise for all women thus informed to ascertain from some competent physician whether any pelvic condition exists that would menace her future. Indeed, women would subserve their own best interests if they would make annual or semi-annual visits to some good, wise doctor, as a prophylactic measure, during the cancer period.

5. Women must be taught that excessive bleeding is never a coincident of the normal menopause, but is a symptom of great import, which should be immediately investigated.

6. A cancer committee should be appointed by the presidents of our different State Medical Societies, the duty of which will be to study the question generally and to evolve the best means of keeping the profession in touch with the subject and furthering, in some dignified and practical way, the dissemination of such knowledge as should be possessed by intelligent women.

On the family physician a great responsibility rests. Through him, in great measure, must women receive education on vital subjects. To him must largely be entrusted the future remedy for the present woeful disregard of conditions which may be fraught with serious future menace to life. Should he awaken to the full sense of his public obligations and rise to the limit of his exceptional opportunities, a new era, full of promise, will dawn upon the cancer problem.

INDICATIONS FOR MASTOID OPERATION.*

By D. H. TROWBRIDGE, M. D., Fresno.

The general public, and I fear some physicians, look upon a suppurative ear as a matter of small importance. Some people think that the ichorous discharge from the ear is even of benefit to the system by draining out impurities from the blood. I might say in passing that this discharge as you all know is only an indication of the disease inside, and in itself is of as much benefit to the general system as a long distance Christian Science treatment would be. Of course if the cause for pus formation exists, it is better that it come out than that it be confined. The fact that there is a discharge merely indicates some diseased condition of the middle ear.

I shall divide this paper into two parts, the indications for operation in acute mastoiditis and the indications for operation in chronic mastoiditis or chronic suppuration of the ear.

The acute cases are the ones we are most frequently called upon to treat, although the chronic cases should be more often operated upon, in my estimation, than they are.

I formerly imagined, and I presume that others have the same opinion, that there was no reason or symptom for opening up the mastoid until there was redness and swelling behind the ear, usually with more or less temperature. Now this is just the point I want to emphasize; the indication for operation on acute mastoiditis is pain. There may be no swelling, no redness, and in fact no temperature, and yet if there is continuous pain on pressure over the mastoid antrum, accompanied by a discharge of pus from the ear, the case is ripe for operation. I do not say that every case that has pain behind the ear on pressure over the mastoid antrum, will not get well without operation, but I do say that by waiting and trusting to hot compresses and ice-bags, we are losing valuable time and oftentimes a life may be sacrificed by this kind of expectant treatment.

When a patient comes to me with considerable pain back of the ear, following a middle ear abscess that does not yield to local treatment readily and quickly, I advise an operation, for the operation is almost free of danger, and delay in liberating confined pus in this region is certainly fraught with great danger.

I believe in making a free opening of the mastoid bone and removing every portion of the diseased process, no matter how extensive the necrosis may

*Read before the San Joaquin Valley Medical Society.

be. Should any diseased bone tissue be left, you are sure to have trouble, a prolonged convalescence, and more or less temperature. After a thorough mastoid operation, when all diseased bone is thoroughly removed, the temperature, if any, will drop to normal and remain there. To illustrate the necessity of an early operation I will cite a few cases:

Mr. R——, referred to me by Dr. J. L. Butin of Madera, a large muscular man. Examination revealed perforated ear drum, with a discharge of pus from it. He had no pain over the mastoid at this time; at the second visit, a week or two later, on pressure over the mastoid antrum, I found at this time some pain. There was no swelling, no redness, and it was only by moderately hard pressure that there was much pain. None of the most marked signs of suppurative mastoiditis were present, but upon opening the mastoid, I found a very extensive necrosis of the bony structure, in fact involving the entire mastoid bone. The lateral sinus was exposed and found covered on the outside with granulations, the necrosis extending down to the dura. He made a rapid recovery. This case was followed by one almost exactly similar a week later from Le Grand, sent me by Dr. McMaster.

Here are two cases with no fever, redness or swelling over the mastoid bone and in which they were walking around attending to their work and yet with a most extensive and dangerous disease of the mastoid, showing that redness, swelling and fever are not necessary to a diagnosis of disease in the mastoid cells.

These two cases just cited had had a discharging ear for only two or three weeks. I now wish to call your attention to another class of cases more acute and rapid in their course.

A baby fifteen months old, sent to me from Hanford by Dr. Toner. Child had had suppurating ear for one month, suddenly showed slight swelling back of ear with very little redness, and there had been for two or three days previous, severe pain, but on appearance of swelling, pain most all ceased. (This relief of pain was due to the abscess perforating through the external bony wall, thus relieving the pressure.) On opening up the mastoid, I found a large abscess cavity in the body of the mastoid bone, which was thoroughly curetted out. The little patient made a quick and uneventful recovery.

Son of Mr. W———, sent to me by Dr. Rosson of Hanford, had been suffering with discharging ear for only four days, had never had trouble with ear previously. There was no swelling over mastoid, nor redness, but severe pain increased by pressure over the mastoid antrum was present. I advised immediate operation and operated the same evening he came in, notwithstanding the fact that the ear had been discharging for but three or four days. I found a large pus cavity in the mastoid bone. After thoroughly removing all diseased bone, he was put to bed and made an uninterrupted recovery. This case shows how rapidly the bone tissue of the mastoid may become diseased.

The main points that I desired to bring out in this short paper are, the fact that the disease of the mastoid bone may progress very rapidly, that redness and swelling are not the most important symptoms, but that pain, especially over the region of the mastoid antrum, is the most important symptom and that by an early operation much destruction of tissue and danger may be prevented.

If you will bear with me I will speak just a few words about the radical mastoid operation. I had the pleasure of witnessing a great many of these in Prof. Politzer's Clinic in Vienna. It consists of removing practically all of the mastoid bone including the posterior wall of the auditory canal, and the ossicles. Then the posterior membranous wall of the auditory canal is made into a flap and the wound back of the ear is closed, the dressings forcing the flap back against the denuded bone, covering it, and the dressing being done through the external auditory meatus. The operation is a modified Stake operation.

This operation is done in chronic cases of suppurative ear disease, and in about 50 or 60 per cent of cases, cures the discharge altogether and certainly removes much of the danger attending a chronic suppurative process in the middle ear in all cases. These is some danger in doing this operation of injuring the facial nerve which should be carefully avoided. The chronic suppuration of the ears is, as I mentioned above, thought by many to be of no particular danger to the patient, but during the past year four deaths due to extension of the inflammation from the ear to the brain have come under my observation. The importance of this is well known by the old line insurance companies who will not accept as a risk an applicant having a discharging ear. I do not claim that every case of chronic suppurative ear trouble should be operated upon, but I do know that most of them would be much safer were it done. Private cases I find are hard to convince of the importance of having this done. But in the clinics of our large cities of this country and Europe, it is more commonly performed than the operation for the acute mastoid cases.

THE PURE MILK PROBLEM*

By GEORGE H. KRESS, M. D., Los Angeles.

The Chairman of the Pure Food Committee indicated in his report, some of the work undertaken at Los Angeles in the effort to secure a supply of pure milk.

The great value of milk as a food to infants and invalids makes it desirable to discuss the subject at greater length in this symposium. To tell the members of this Society that hundreds of lives are annually lost because of dirty milk is to state nothing new. And yet so long as the medical profession allows dirty and dangerous milk to be sold to those who do not know its menace to the health and life of loved ones, just so long should medical men be reminded of their negligence and responsibility in this most important problem.

I believe it may be safely stated that if medical men did their full part to educate the lay people concerning the danger involved in the use of dirty milk, that it would only be a short time before the use of such milk would be done away with. The laity does not consume dirty milk because it prefers

* Read as part of a Pure Food Symposium at the Thirty-eighth Annual Meeting of the State Society at Coronado, April, 1908.

it. It drinks it and allows infants and invalids to drink it, because it does not realize the danger therein, the medical profession not having done its full part in educating the laity in regard to this matter.

I believe that if we act unitedly, we can secure clean and safe milk for every city of California within five years. For what can be done in one place can be duplicated elsewhere, if the right forces are brought into action. Through our Pure Food Committees, (or better), Public Health Committees, as we hope to have them called, we possess the means whereby these ends may be attained. Place men who will work on your local public health committees, and they will be able to inaugurate a pure milk campaign in your county, without an over-great amount of effort.

There are two phases of the subject which we wish to briefly consider to-day:—certified milk and inspected milk.

By certified milk is meant milk from a healthy and tuberculin-tested herd gathered under such conditions as to keep the bacterial count down to a minimum so low as to indicate that the hygienic and sanitary conditions of the entire establishment are absolutely first class. In our certified dairy at Los Angeles the bacterial content must be less than 20,000 colonies to the cubic centimeter, but we hope to lower this in the future.

It is not possible in this brief talk to enumerate the many items which are necessary to attention by the dairyman, if he wants to produce a certified milk of known chemical and bacterial standard. The score cards which have been passed among you, give an idea of the factors to be considered.

It is most important that we should have milk of the certified standards, because infants and invalids should be given no other. Its extra cost, however, will prevent its universal use.

What is needed, therefore, above everything else is a safe milk, produceable at about the present prices and approximating as closely as possible, a certified milk standard. In other words, an inspected milk, so-called. By inspected milk is meant a milk inspected by city, or preferably, state officials, and conforming to the proper chemical standards as well as having a comparatively low bacterial count, say of 100,000 colonies to the cubic centimetre, instead of 500,000 or a million or millions, as is usually the case. Such a milk can be obtained, I believe, if we have a healthy herd and sterilized utensils.

The milk industry, so far as distribution to the consumer is concerned, has already fallen under the control of a few large dealers, and their creamery or collecting establishments are fitted with the steam and apparatus needed for sterilizing cans, bottles and other utensils. If we teach the small dairyman how to keep a well ventilated and clean barn, and clean corrals, and then instruct him to have the udders of the cattle and the hands of the milkers clean before milking, it will be possible to secure a pure and untainted milk from the cows and receive the same into the previously sterilized cans without an over-great amount of contamination.

In other words, if this method could be put in vogue, it would be possible for us to obtain for the entire state of California, a milk almost equal in standard to a certified milk. All that is necessary is that we set about our task in the right way and show the large dealers and small dairymen alike, how this end may be obtained without much extra work and in the end, with more money profit to themselves.

But to obtain a milk of such standard inspectors are necessary, and a system of scoring dairies is necessary. The score cards which I have passed around are different from those shown last year. One year's experience with last year's form showed its typographical make-up to work against it, because the ordinary inspector was not able to comprehend and apply its suggestions.

To overcome this I devised with Dr. Powers, a form which, while occupying more space and more paper, is, however, so simply arranged that we believe that any ordinary inspector should be able to mark a dairy without much trouble.

The scheme is, I think, self-explanatory. The Pure Food Commission will take this matter up with the county public health committees later on. It is only necessary to add at this time, that without some such system of scoring dairies, it is impossible to develop sanitary dairies.

In conclusion we would present the following:

1. Dirty milk, and that is the kind the great majority of citizens of California are drinking today, owing to its bacterial contamination, is dangerous to the public health and is the cause of much sickness and death, particularly among infants.

2. The lay people of our state drink this milk which is a menace to their health and lives because the medical profession of California has not done its full duty in educating them concerning this danger.

3. When the laity are once educated concerning this menace to their health and lives, they will gladly co-operate in all intelligent and sane efforts for the production of a milk supply that is clean, pure and safe.

4. The logical persons to carry on this campaign of education are the members of the medical profession.

5. Through the Public Health Commission of this Society and the public health committees of the county units, we have the basic organization necessary to the inauguration and development of this work throughout the state.

6. The Public Health Commission serves notice on you at this time that it intends to push this particular work during the coming year, and that it counts on all members of the Society, individually and collectively, to co-operate.

7. Further, THE JOURNAL will contain notes of the work as it progresses. The Commission invites correspondence from those who are interested.

SANITARY SUPERVISION OF BAKERIES AND RESTAURANTS.*

By L. M. POWERS, M. D., Los Angeles.

The inspection of foodstuffs from the market to the table has not engaged the attention of the sanitarian or the public to the extent that it deserves. While much interest has recently been manifested in the inspection of foodstuffs for the market, little attention has been given to the manner of handling them after leaving the market and while undergoing preparation for the table, a period during which foodstuffs are subject to many manipulations, oftentimes by careless and unscrupulous persons who have only a shortsighted monetary interest to serve. The bakeries and public kitchens are the places where many of the tragedies of the digestive system are planned. All cases of ptomaine poisoning do not originate in the butcher's cold storage or market, but often in the poorly kept and over-worked icebox of the restaurant or eating house.

How often infectious diseases are contracted in these eating houses we do not know, but we do know that many times the exposures are very great. Where the napery and table ware are well boiled, and no food once served on the table is again returned for another consumer the danger is greatly minimized.

In bakeries conducted without proper regulation and supervision you would be surprised to find that there is a total disregard for sanitation. It may be that the bread and pie served on your table is baked in a place that the flies, dogs, cats, chickens and rats have free access to. I have seen a table on which pies were being made literally black with flies, a hen's nest in one corner of the room; and the excuse given for not having screens on the windows and doors was, that the cooking was done at night time when the flies were not active.

Breadstuffs are often hawked around town through the dust-laden streets and alleys uncovered, handled by dirty and, perhaps, diseased hands, and are left, unprotected from filth, on the back porch.

Should you go into the kitchens of some restaurants or eating houses, perhaps where you get your meals, you would be surprised to find the floor reeking with filth, odors arising therefrom not at all conducive to a good appetite; the icebox sour and containing strong evidence of incubative purposes; the water closet in very close proximity to the food, the toilet room being ventilated through the cook-room; and the cook and his helpers suffering from some form of infectious skin disease. Rats, flies and other insects playing and feeding on the food which is to be served; the dishes run through lukewarm water, and wiped, if at all, with a dirty cloth; the knife and fork retaining a visible portion of the egg some poor tubercular person ate at the meal before; the scraps from the table carefully sorted, and placed aside to be served at the next meal; the milk allowed to stay in the alley near the slop cans until received with dirty hands, then robbed of its cream and the cans set on the floor where the insects and cats have free access to the contents. In these places also alterations and substitutions are carried on to a great extent. The patrons, it is needless to say, do not see these conditions, and do not realize the danger therefrom, therefore the careless and unscrupulous restaurateur or caterer does not feel called upon to make any changes so long as he is not losing trade.

The sanitary regulation of bakeries, "pie factories," restaurants and eating houses by good sanitary laws and a system of inspection will bring about such beneficial results as will be appreciated by the most skeptical. The chief points to be considered in these regulations and inspections may be summarized as follows: a sanitary building, by which we mean a building constructed of such material and in such a manner that it can be kept clean and well drained, mouse and fly, or, in fact, insect proof; provided with separate rooms for storage, cooking, dressing, and toilet purposes. The bread and pies handled by healthy, clean and careful persons. The distribution of breadstuff should be made in a manner to protect it from dust, flies, and uncleanly or diseased persons.

In public eating houses there are all kinds of food to be protected from insanitary handlings and surroundings. The store-rooms ought to be kept clean and free from insects and mice and rats; the ice chest should be clean and uninfected; the floors clean and well drained, and proper provision provided for scalding and cleaning all table ware; the workers should be free from infectious diseases and clean in person, and the food should be wholesome and uncontaminated by insects or filth of any kind

* Read as part of a Symposium on Pure Food and Public Health at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

SYMPOSIUM ON PURE FOOD.

Discussion.

Prof. Jaffa, Berkeley: It seems to me that these are very interesting and instructive papers and exhibit great progress in the pure food movement. Such efforts are a wonderful help and encouragement to those who are engaged in this movement. I think such efforts are along the right line,—that is, educating the public or layman. If the public is not educated then our work is not going to be of value. Who is better able to educate them, primarily, than the doctors, and secondarily, the Mothers' Clubs, because you will find that whenever a Mothers' Club takes hold of a proposition of this kind, that proposition is successful. If a Mothers' Club should boycott certain goods, the dealer of such goods would have very small chance of selling those goods. Illustrations for such cases are many. Take the case of the dried fruits, and at the present time that is an extremely important question on account of the agitation going on,—and if the public was educated to understand that these highly yellow colored fruits, no matter of what kind, are not so nutritious and do not possess as fine a flavor, there would not be the demand for yellow dried fruit. If they understood in the case, the large amount of sulphuric acid they contain, there would be no sale for them. But the layman does not understand and consequently these articles are the ones which are bought. It is the same way with the desiccated vegetables. Vegetables are a food the value of which is not thoroughly appreciated by many to-day, but the fact that they are nutritious has led to their being treated in such a way that they can be imported. In the preparation of some of these vegetables, bleaching

is carried on to such an extent that the vegetables contain 1% of sulphuric acid. Are these nutritious or healthful? No. How many of us thoroughly understand the value of skim milk. Many think that the nutriment is gone and skim milk has little value. In a good many cities to-day the sale of skim milk has been prohibited. Such ideas are carried altogether too far. We all know of the sale of skim milk in Denmark where they have the different grades of milk and no man is afraid of it. So our line of improvement has a great deal to do with the matter of educating the public. If we look over the amount of adulteration which has been practiced, less than 15% is due to preservatives and the rest to the fruit. With reference to the meat question, the sophistication is decidedly less during the past two years than it was previously, owing to the United States meat law. That exercises supervision on products manufactured in one state and sold in another. The goods manufactured and sold in the same state, are not supervised. That is why it is such a necessity to have a good state law. The Federal laboratories cover only goods manufactured in one state and sold in another. With reference to the meat packing houses which manufacture any class of goods to be sold outside of California, they are subject to Federal inspection and that is extremely rigid and the law is enforced. The Federal law prohibits the use of all preservatives and only allows the common preservatives like smoke and vinegar. The results certainly show the benefit of such a law. In the case of the mixture of mustard oil for salad and cooking, it is just as good as olive oil, but the question that is raised is over the labeling, for that is misbranding. Another issue is taken over the weights. So many boxes are labeled 25 pounds, whereas they contain only 19 or 20. When this is detected the manufacturers claim that the other fellow is doing it and that there are a great many other cases of misbranding. The United States law, however, is enforcing proper labeling of these materials and taking away the privilege of putting on any kind of labels. Much is also being done with regard to coffee substitutes.

Dr. Ward, University of California: I have listened with a great deal of interest to the accounts of the progress that Los Angeles has made along the lines of clean milk. Pasadena is to be congratulated also upon having brought about the tuberculin test. I have participated in two failures of that kind and can appreciate the difficulties of this work. Palo Alto tried this scheme several years ago and failed. Berkeley has tried for three or four years to bring about these results and has practically failed. The matter is still hanging fire. The trouble is that we have neither the medical profession nor the laity with us. I want to emphasize the difficulties in bringing about that great change in dairy industry which the tuberculin test means. In Berkeley to-day 18% of our cows are tubercular. Dairies with 100 or 200 cows supplying San Francisco with milk have 20% or 25% tubercular cows. If this fact can be hammered home to you,—the medical man,—and its significance, you will realize the necessity for the crusaders to have your support. We can have more ordinances passed in that way and we can stop the evil by state appropriation. The state will not appropriate the money. It has been tried in a dozen states and has failed. We can only get at this by education of the consumer and that must come through the family physician. When the consumer demands it he will get it. Another phase of progress here in the south is the certified milk movement. Oakland made a little start in this line several years ago, in the absence of action by the local medical society, through the Oakland Home Club, which took up the matter and assumed the responsibility. We have had a dairy there for three or four years which has been distinctly in the process of evolution. I think no one realizes, outside of those working on the subject, as we do, the improvement that that dairy has shown. It is getting to a stage where it is very satisfactory. It has been a case of evolution of the dairy in the hands of the poor man. He had not the capital to put in it and so he made his progress in proportion to the demands of the people. He has 93 cows now supplying Berkeley. San Francisco has just now established a certified dairy which is only a week or so old. I recommend that the San Francisco physicians urge the support of that dairy by notifying the public of it.

Dr. F. M. Pottenger, Monrovia: Clean milk is a very costly proposition. We have voted for a good dairy (in my town), we have a tuberculin tested herd and have a clean dairy, but we have great trouble to get the dairymen to understand what we want. They are dirty and cannot understand our principles. I can easily see what trouble the uneducated man would have in getting these men to do what we ask. Our milk is now produced at the cost of 25 cents or 27 cents a gallon. Milk cannot be produced at only the one price. We must educate the people that they must pay for this cleanliness. But it is the same in other matters, we have had difficulty in this country in getting things produced clean. Dr. Powers has detailed to you the conditions of kitchens. It is all so, only we do not see these things as they are. I have had great difficulty in getting a clean cook, and now that I have a man who understands what I mean by cleanliness and is willing to do what I want, he has to discharge his under help four or five times a week in his endeavor to find the right man. I have, however, a kitchen I am proud of. But my cook has to discharge his men for dirtiness and because they will not obey rules, and he has great difficulty in finding men who can understand what cleanliness really is. The class of men doing kitchen work in this country to-day are a lot of hoboes and one simply has to stand over them with a club. You will find that it is a mighty hard thing to get things produced as they should be produced. I have been giving talks to our help at home in an endeavor to have them co-operate with us, but the average man does not care. These are the men who cook our food and handle our food throughout the country.

Dr. Geo. A. Hare, Fresno: I would like to emphasize the necessity for the medical profession to back up this movement for pure milk. Some years ago some member of the Board of Health in Fresno inaugurated the pure milk movement. Every cow in the county was certified and tagged and registered and had the tuberculin test. We maintained this for a number of years and had good milk. It closed up about one-third of the dairies which supplied Fresno, while two or three organized and milk went up two and three cents a quart. The Board of Health had the responsibility and they did not lose any prestige and the dairymen flourished, while the public was satisfied. The point is this, that so long as the Boards of Health of our cities are dominated by politicians, so long will this movement be a failure. The moment we have a Board of Health manipulated by political interests, just then will it fail. There is constant failure before us because every election we have these places in the Board of Health filled up by political pull. It keeps the Board of Health crippled and is demoralizing to the best of work. Let the medical profession exert an interest that will manage and control every Board of Health; that is a logical part of the duties of the profession, it seems to me. If we insist upon the Board of Health being under the medical profession, we lay the first foundation. Without this I believe our work will prove a failure. This work is work of reform and it is to get the foundation so that we can get control of the Board of Health, for which we must strive.

Dr. Chas. G. Levison, San Francisco: I would also like to say a few words with regard to the milk supply being controlled by these municipal Boards of Health. I do not think that that is the way it should be. The milk supply must come as a matter of state legislation. In the City of San Francisco the milk comes from herds of cows that are tuberculous, and the milk comes into the city from surrounding counties, so that the Board of Health cannot control the care of the cows. The Board of Health has power to control the milk situation only up to a certain point, but not to determine the source of the milk. When it was called to my attention that the milk which we receive in San Francisco was the milk from tuberculous cows, it was a matter of great astonishment to me. The people are not familiar with that fact. This problem is one of the greatest magnitude and attempts have been made in a number of cities to rectify milk conditions, and these attempts have been failures. If we attempted to destroy the cows that are tuberculous, it would be a tremendous thing. The subject must be approached in a very slow manner. Ward, of the University, has said that tuberculosis among the cows has been eliminated by isolation of cows after the cows have calved and the calves have been raised on sterilized milk. Eventually this would eliminate the tuberculous cow and it seems to me that this method would be a correct one.

Dr. T. C. McCleave, Berkeley: I cannot agree with the speakers who have brought up the question of politics. I think the introduction of pure milk depends upon the attitude of the family physician among his patients. In my own practice, for instance, I have had to do with a great many families having small children. Not one family is supplied with any other milk than that from the certified dairy. This is the whole proposition. Probably when we tell these mothers that they must get their milk from the certified dairy, they will reply that they cannot afford 12½ cents and 15 cents per quart; that she is only paying 10 cents at the present time. I then explain to her the value of the other milk, that the baby must have it, and that the extra cost per month for the certified milk would only amount to $1.25, and I tell her that if she says she cannot afford to pay $1.25 per month more for the care of her child, then I do not want anything more to do with her family. I have never had a mother tell me yet that she would not afford this extra amount per month. If every physician having to do with children would put the matter up to the mothers, it would not be long before the mother would be taking the pure milk for her children. I watch the milk myself. We have been handicapped by only one dairy. When the mothers complain that the milk does not look good, I order that they bring the milk to me at my office and I have it examined and so keep track of its condition. Some of this milk looks quite pink and we find out that the cows have been milked too soon after calving and we have such things stopped. Show the people that you are interested, and as I say, if you family physicians will do this, it does not make a particle of difference what the politicians do or whether the tuberculin test is enforced or not. When pure milk is demanded by the people, pure milk will be supplied, and not before.

Dr. J. C. Spencer, San Francisco: It has impressed me that this whole matter is a proposition of educating the public. Of course the matter of the price of pure milk is a very serious factor. As I understand from the dairy authorities, they cannot produce certified milk as long as it is sold at 15 cents a quart. By way of suggestion, if the lay-public is to be educated we must extend the first process of education. If any given community has a dairy where certified milk is produced, a simple means would be to take the owners of the other dairies and force them to come to the dairy where certified milk is produced and let the certified dairy stand as an object lesson.

Dr. Martin Regensburger, San Francisco: This is clearly a case of education. The public must become interested and the school children and the women must be educated. If the doctors were to go before the teachers' institute and talk to them, and educate the children, a great deal of advance could be made. It is a matter of the most importance.

Dr. W. S. Fowler, Bakersfield: One of the best means for educating the public has been neglected. The greatest means for improvement is that of public information through the press. Dr. Aiken of Fresno says that he has no doubt but that the milk would have been improved materially if the newspapers published data comparing the different areas and their progress. If competition can be brought about an immense amount of labor can be saved.

Dr. W. C. Rucker, U. S. P. H. and M. H. S., San Francisco: For the information of the members I will say that there has been issued quite recently a volume of important studies on this milk question. It is a study of the milk in the District of Columbia. Those of you who are interested will find this book worth while. It is the most exhaustive thing I have seen, and was recently published by the Public Health and Marine Hospital Service.

Dr. Jas. H. Parkinson, Sacramento: This whole question consists of the education of the public. If the public is properly taught there is no question but that we can accomplish all we signify is to be done. In this connection we cannot but wonder at the situation in San Francisco at the present time. The Mayor of 1908 has thought best to put up a Board of Health consisting of five laymen and two physicians. Whether this was done from the sanitary or the political standpoint I do not know. I think that such a step should be considered. I think we have several new problems before us to-day. As it has been pointed out in Los Angeles, we have the question of housing. Our cities are becoming larger and we are growing up in the air as well as along the ground. In addition to the Japanese and Chinese we have the European population, and these all present some problems and difficulties. With regard to the milk supply and the milk control, it has been questioned whether the Board of Health can control the milk problem from outside. It can be done, I think, by the public being informed. In Sacramento our milk is coming from out of town. We have compelled the milk men to get numbers and be registered. The pure milk and the certified milk is going to be a difficult thing to bring about in our country. When you consider the neighborhood of the dairy yard and remember our rainfall, and that the dairies are along the bottoms of very large rivers, it is going to be impossible to keep decent dairy yards. We can build them on mounds and they will be in mud. It is impossible to keep things clean. I do not know what is the best thing to do there. With regard to the care of the milk in transit a great deal has been accomplished. You know what it generally means to take the milk to town and bring back garbage in the empty cans. Much has been done toward rectifying this condition. Another problem against which we contend is the use of the milk cans for making coffee in restaurants. The milk comes in, the coffee is added and the cans are put right on the range. The public must be taught the importance of these questions. Another point is the question of contamination with flies. Enormous stress should be laid upon that point. Flies are our arch enemies. We also have to deal with the question of dust and exposure of vegetables. The vegetable man complains that he cannot sell fruits and vegetables unless they are exposed to the view of the public and are where they can be handled. We are going to try to stop this. If we can only show

the public that it is for their benefit that we want these things and that it is not going to cost them a cent, we will be able to get their co-operation.

Dr. Edward Gray Eldridge: This question has come to my attention in a somewhat different light than to the rest of the profession. I am serving the State of California at the California Home for Feeble-minded. We have a herd there of about fifty-four or fifty-eight cows. The state sends annually and sometimes semi-annually a veterinary to inspect this herd. Two years ago the result was that we lost twenty-three of our herd on account of the reaction to the tuberculin test. You would be surprised to know that often it is not the lean and thin cows, but the very finest and choicest animals which will react to the tuberculin test. We have had post-mortems on every cow which has been condemned and every time the results show the advantages of the tuberculin test. We have found the abscesses, with the cheesy degenerations, in no matter how healthy the animal which reacted. Since this inspection two years ago we have not lost so large a number, because the herd was so thoroughly weeded out. At Eldridge we have under our care epileptics, feeble-minded, imbeciles, idiots, etc. They are not the cream of the land, but we undertake to care for the health of the children committed to us. If the state can take care of its least desired population, certainly the medical profession should join together in taking care of the great body of children and adults under its care.

Dr. Wm. Simpson, San Jose: We tried years ago to force every dairy to the tuberculin test in Santa Clara County. We passed ordinances to that effect and put two-thirds of the dairies in Santa Clara out of business because of the cows that were killed. We taught the people of the county that it was necessary to have this law and that the dairymen could not sell a cow in Santa Clara County unless that cow had been tested. For a few years we have had no regular inspection, but in the last year this has been taken up again and no dairyman can sell a quart or pint unless he has a license which carries with it the necessity of certified milk and a clean dairy. These rules are not only from the tuberculosis standpoint, but they average up what the milk inspector thinks is the proper standpoint. At first we prosecuted every milkman who sold impure milk and revoked the license when the milk was reported below the standard. Our milk comes from quite a distance outside of the county, from Gilroy and Watsonville. A few years ago the Boards of Health wanted a satisfactory Dairy Bureau, but the milkmen assessed every milk dairy in every city $2 a cow and they went to Sacramento; the Dairy Bureau is now composed of milkmen.

Dr. F. L. Rogers, Long Beach: I feel that the matter of pure foods is not to be passed by without a little more being said along the line of some of the practical results of work of this kind among the little folks in our public schools. There has been started in different parts of this state a movement, the result of which shows perhaps as well as any other movement which we have had, the need for work of this kind in the interest of the growing children. In Los Angeles there has been in connection with the public schools a movement for the inspection of the children. The Board of Health and the Board of Education have taken this work up in an active way and they now have examinations for the public schools. The results of that examination are such that it seems to me that they cannot but see the great importance of the inspection along the line of pure foods, pure milk, and also the benefit from pure air and sanitation and other matters in general. In our little town of Long Beach the work was undertaken in 1906, and while it was a preliminary work there, the board took the matter up with the idea of first determining how many of the children were defective in sight, hearing, throat and nose. The work was placed in my hands and I have just completed the work of examining 3,480 children in the public schools. Incidentally I have examined the children's mouths and teeth, and you would be surprised to know how extremely few children have good teeth. There are less than twenty per cent with sound teeth, and I believe carelessness and adulterated foods are responsible for it. Sixty-one per cent are deficient in one of the four special senses. The greatest deficiency is the sight in one or both eyes, and there is also deafness and adenoids. These are just a few of the statistics that I remember, but the figures are to be had and also those of Los Angeles. The work has been carried on in a much more extended way, making the examinations of the whole body.

Dr. F. C. E. Mattison, Pasadena (closing discussion): One word with reference to the term certified milk. Certified milk means milk certified to for cleanliness. I am very glad to know of the work being done in Alameda County and that the owners have to sign agreements, and that a violation of the agreement means a fine of not less than $500. The dairyman has to come up to certain requirements and has to agree to furnish the dairy in certain ways and to do the milking in certain ways, and a violation of this should mean a fine. In Pasadena we allow the certified milk a maximum of 20,000 bacilli to the cc. This has been coming down and we hope it will come down to the limit. When this dairy is in the perfect working order that we expect it to be, we will keep well below this amount. With regard to the organization of this work, the plan pursued by the Pure Food Commission has been to interest the ladies. You will find that if you get the women's clubs interested you can organize this work. Get the women of the clubs together and tell them the plans and the reasons and you will find that you have a force at work greater than any medical societies. In no other way could we have carried on this work if we had not interested the women's clubs. They have more wit than we have in getting the things that they want. The great thing to overcome is the ignorance of the laity. In our work we had our inspectors and we had meetings of the various bakeries; we had the representatives from the clubs and we laid the matter before them. I had in my possession bills from the vegetable houses and dealers in supplies who had been supplying these bakeries. I had bills for cases of rotten eggs which they use in these bakeries, adding a preservative. And when the representatives of the clubs and the laity understood the condition, with their help and that of the good bakeries, we carried our ordinance. The Medical Society of California is a power in itself if we use it properly. What we lack is organization. We must make each man feel that it is in his power to get the pure foods that we want.

Dr. G. H. Kress, Los Angeles: If the county of Los Angeles can get pure milk in five years, the State of California can certainly get it in five years. There is another point in which we need help. The County of Los Angeles, in order to get a grip on the dairies, asked that one of the city inspectors be deputized as a state inspector. In that way the interest of the state would be a safeguard. I believe that we will get clean milk in California in five years.

Dr. Stanley Black, Pasadena: With regard to the meat question, unfortunately all the meat which cannot pass the U. S. inspection is turned into the State of California. This should be stopped by the Boards of Health. We should combine with the United States in that regard. We have in Los Angeles an ordinance to inspect all slaughtered animals and it is working out well. In regard to the tuberculin testing of cattle, we should have statements with regard to what some of us are working for. We began the tuberculin testing of cattle in

Pasadena eight years ago. The public was not then interested and did not understand. But every cow there must be tested and we are now using the Government tuberculin, which is the best. With this we are working in conjunction with the Marine Hospital and the meat inspectors of Los Angeles. In testing the cattle we have a great deal of trouble with the veterinary and we are giving him pointers. There were hundreds of cows that were sacrificed that were never tested at all. Now we require a report from every cow tested, and all of the cows must be branded. If we can only spread this work throughout the state it will insure a state law.

LUETIC STIGMATA OF IMPORTANCE TO THE GENERAL PRACTITIONER. *

By HERBERT C. MOFFITT, M. D., San Francisco.

In consultation, as in ward work, the question of an old syphilitic infection must frequently be raised. Wise skepticism is nowhere more in place than in dealing with a negative history in face of a suspicious clinical picture. Crocker got no history in 20% of his cases of tertiary syphilides. The dictum of Gowers is to be remembered,—"If there has been any possibility of exposure to infection, the disease cannot be considered to be out of the question." Of the greatest importance at times is the suggestion given by this or that earmark that indefinite and obscure symptoms may be due to syphilis; a tibial periostitis may give another direction to the treatment of an ill-defined "neurasthenia"; an Argyll-Robertson pupil may explain the true nature of obstinate intercostal pain; a palmar sphilide may change the prognosis of an irregular liver tumor. It is the aim of this paper to emphasize anew the importance of certain stigmata in diagnosis.

1. The *facies* may be suggestive. The small, wizened, puckered face of congenital lues needs no description. There is a puffy, stupid, greasy face rather peculiar to cerebral lues. Scars at the hair border or over the forehead, a sunken nose, ptosis or strabismus excite suspicion at first glance.

2. The *skin* shows many signs. This is not the place to describe the varied dry or ulcerative late syphilides. They rather characteristically lack polymorphism and are apt to be regional. A woman seen some years ago with cerebral lues had a tubercular syphilide of the nose and adjacent cheek. A man with gummata of the liver had rupia of the trunk. A man with great pain and stiffness of the back wandered to several springs for relief of rheumatism; he had a beautiful bilateral palmar eruption, and got perfectly well under mixed treatment. It should be remembered that this palmar psoriasis may occur many years—Fournier cites 15 and 31 years—after infection. Sharply cut, round, crescentic or serpiginous ulcers, especially if indurated and grouped regionally, are most suspicious. Frontal ulcers or scars are not common. A woman seen 9 years ago in the clinic had vomiting and headache with optic neuritis and circular pigmented frontal scars. A young woman for years treated for lupus had serpiginous pigmented scars over the trunk and both things, and massive thickening of both tibiæ. An old physician had for two years a large and tender liver referred to malaria and peculiar nocturnal suffocative attacks labeled asthma. He had extensive oval ulceration over the front of both tibiæ about the middle of the leg that had been treated for three years as varicose ulcers. Under iodide and mercury he made a rapid and complete recovery. Varicose ulcers are usually below the mid-leg and on the inner side; ulcers near the knee are apt to be luetic. Ulcer of the penis may recur at the site of the original chancre, and be mistaken, if indurated, for a recent infection; a young man seen during the last three years has had three recurrences of an indurated ulcer in the sulcus at the seat of the original sore.

Linear scars about the lips may mark congenital victims. A young woman seen lately with syphilitic joints had these puckered scars as the only stigma. Depressed, circular, brown pigmented scars grouped over the trunk or about the knees or over the shins are frequently of sphilitic origin; the scars of trauma or varicella most often lead to confusion. Recurrent herpes of the penis should be given some weight in diagnosis. A young man with indefinite night terrors and headache was long labeled "neurasthenic" until a history of recurrent herpes gave hint of a specific origin of the symptoms. He got well under specific treatment, and his two children, seen later, were typical congenital syphilitics. A man with peculiar cerebral symptoms gave history of several infections with gonorrhea, but knew of no lues. He had recurrent herpes genitalis, and was cured by a course of mercury and iodide. A man with tabes had recurrent attacks of herpes for years.

The notched and peg-shaped teeth of congenital cases need but to be mentioned. In a boy of eight, broken, thickened and rudimentary finger nails gave a hint of the cause of long standing enlargement of liver and spleen.

3. *Glands.* Enlarged posterior cervical and epitrochlear glands mark a recent rather than old infection. They are frequently found large without any evidence of syphilis, and their importance in diagnosis of old cases has been much overrated.

4. *Bones.* Exostoses are frequently syphilitic. A man seen in 1899 had a painful tumor over the right parietal bone and Jacksonian epilepsy; both were cured by specific treatment. A man seen in 1902 had cerebral lues, a biceps contracture, a painful node on the right humerus and ulcers of the leg. A woman with scars on the tongue had a thickened right tibia. An old man seen this year with cerebral lues recovering under specific treatment had a thickened right tibia that at first suggested Paget's disease. Painful nodes on ribs or sternum are not rare. A man seen last week has had during 8 years painful nodes recur on parietal and frontal bones, both ulnar and radii, both humeri, scapulæ and femur.

5. *The nose* is frequently attacked from without and within by late syphilis. The deformities from external and internal destruction have already been mentioned. Rapidly obstructing gummata may

* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

be mistaken for sarcomata. A young man, who denied infection, was seen six years ago with a tumor blocking the right nostril. A fragment removed was reported as sarcoma, and operation was contemplated until iodide led to rapid disappearance of the mass and to a confession on the part of the patient. In a woman seen lately an exactly similar condition maintained. Ulcerative gummata are most frequent on the bony septum, and frequently lead to perforation. Not all perforations of the septum are syphilitic, but they should at least suggest the possibility of such origin. Last year a man was seen in a peculiar mental state that had been referred to overwork and worry. The possibility of syphilis had not been suggested, as the man was regarded as "above reproach." There were no signs but an optic neuritis and a perforated nasal septum, but recovery was rapid under mercury and iodide. A woman seen seven years ago had cerebrospinal lues and extensive destruction of the nasal bones—her son aged 12 had a perforated nasal septum and Hutchinson teeth. Ozena is, in my experience, more frequently a sequela of syphilis than the writings of specialists would have us believe. (See article of *Sendziak* "Atrophic Rhinitis" *Annals of Otology, Rhinology and Laryngology*, Dec., 1907, page 819). The pleasing verse of *Ambroise Pare* may be cited:

"S'il tombe quelquesos du palais
Danger y a d'estre punais."

A young man developing epilepsy in the last years had ozena of about the same duration; he has been free from attacks under specific treatment. In a mother and son, both syphilitic, ozena was a most distressing symptom. In a man seen lately the syphilitic origin of obscure symptoms was first suggested by the odor from his nose.

6. Examination of the *mouth* should never be neglected. It is a fact not generally recognized that mucous patches may appear years, *many* years, after infection. *Scars* may be seen upon hard or soft palate, the pharynx or the tongue. Extensive destruction of the soft or hard palate may take place rapidly, or slowly and insidiously, and perforations result. A woman with tabes had ulceration involving almost all of the soft palate. The tongue is very frequently the seat of gummata as of mucous patches. There may be superficial plaques or deeper tumors, or cracks, fissures and lobulations. Gummata are most often lateral and dorsal, and commonly lead to ulceration. A man seen recently with hemiplegia, nasal bone destruction and a clear history of other syphilitic manifestations was about to have the tongue removed for carcinoma until iodide was suggested. An old man seen four years since had both gumma and carcinoma, the latter developing on the site of the neglected gumma. Smooth atrophy of the tongue, first described by Virchow, was seen last year in an old woman with tabes; its significance was reviewed in 1905 by N. B. Potter of New York.

Keratosis or leukoplakia of tongue or cheeks is frequently but not necessarily or directly of specific origin. Patches on the cheeks were recently observed in a man, not a smoker, whose infection dated back 30 years. A woman seen two years ago complained of obstinate pain in the right hypochondrium, which was associated at times with a girdle sensation. There was a history of transient diplopia, of lightning pains, and her husband, seen lately, has leukoplakia and advanced tabes. A woman examined last year had a marked secondary anemia unexplained until her husband was found to have very marked lingual keratosis and an aortic aneurism.

Hemiatrophy of the tongue, when not due to peripheral hypoglossal nerve injury, should suggest syringomyelia or tabes.

7. *The eye.* Interstitial keratitis is not rarely seen in congenital cases. A girl of three was brought to me five years ago on account of malnutrition. Liver and spleen were enlarged, and her father had been seen for a peculiar nervous state with no definite symptoms other than transient aphasia. He denied lues, but had of late years recurrent herpes of the penis. The child was given mercury and chalk, but treatment was neglected, and she came back three years afterward with blepharospasm and nearly blind from keratitis. Recovery was perfect under specific treatment. Two sons of a father who had rather unaccountably developed acute neurasthenia and who also had many recurrences of herpes of the penis without history of chancre presented interstitial keratitis, lip scars and other signs of congenital lues.

Syphilitic iritis may be a late lesion; a man seen this year in hospital had signs of cerebrospinal lues, lymphocyte increase in the spinal fluid and an acute iritis. It is well known how frequently extrinsic eye muscle palsies owe their origin to syphilis, directly or indirectly. Nothing is more common than to hear a tabetic tell of several periods of transient diplopia. Slight degrees of ptosis should not go unnoticed. The first glance at an old woman who came to hospital this year on account of an indefinite stomach disorder suggested a syphilitic cause of the gastric symptoms as well as of a slight ptosis, and the results of treatment confirmed the suspicion. In a young woman seen last year a gastroenterostomy could have been left undone had the surgeon followed the hint of a well marked ptosis that the pain was that of a gastric crisis and not of ulcer. A man examined last year had been treated for months as a case of trichinosis (despite absence of eosinophilia) because of intense muscular and nerve pains. In addition to signs of dorsal nerve root trouble there was an optic neuritis and unilateral ptosis, and he has greatly improved under treatment. A man entered hospital this year on account of a recent diplopia. He had pupils almost inactive to light, no knee jerks and many lymphocytes in the spinal fluid.

Much more important than the paralysis of extrinsic ocular muscles, (because this is most often a transient phenomenon), is the confirmation of pupillary changes. Babinski says that an Argyll-Robertson pupil always means syphilis. Moebius' sentence may be recalled "Die reflektorische Pupil-

lenstarre ist bereits beginnende Tabes." In some cases the loss of light reflex is unilateral. A slow reflex is of import; and at times (it has seemed to me more often in the pseudo-tabes of cerebrospinal lues) reaction to accommodation is lost as well as to light. Small irregular pupils in a young adult are suspicious, especially if there be a sudden irregular cleft in an otherwise unchanged outline. A man seen two years ago had been operated upon for gastric ulcer, although inactive pupils should have suggested the possibility of gastric crises. A man seen two years ago had a hard tumor of the right testicle, marked arteriosclerosis and Argyll-Robertson pupils. A man examined last year had nephrorraphy done for relief of pain due, in light of inactive pupils and absent Achilles jerks, to disease of the dorsal nerves. It is so easy to examine pupils as a matter of routine, and so much may be learned, that it is a matter of constant surprise that so little attention is paid to them. An Argyll-Robertson pupil may shed new light upon an indefinite neurasthenia, an obstinate trigeminal or intercostal neuralgia, an aortic insufficiency of dubious etiology, a mysterious stomach affection, or a persistent paroxysmal cough.

It is impossible to lay too much stress upon the importance of the ophthalmoscope in diagnosis. A specific choroiditis, an optic neuritis or a primary or secondary optic atrophy may give valuable hints of specific disease. A man seen three years ago had been treated for several months as a stomach case by reason of frequent vomiting and indefinite abdominal pain. An optic neuritis was the first suggestion that the underlying cause was cerebrospinal syphilis. Mention has been made above of a case regarded as one of nervous breakdown, in which the peculiar mental hebetude, an optic neuritis and a perforation of the nasal septum led to the recognition of the syphilitic origin.

8. *Vascular Changes.* Early arteriosclerosis, if not due to kidney or adrenal disease, lead or diabetes, is most suspicious of syphilis. A persistent high blood pressure without marked arterial change has in several instances suggested the possibility of a luetic cause. Aneurism is nearly always a syphilitic product or by-product; out of fifteen cases seen in private work all but two gave positive history or signs of a previous syphilitic infection. It is frequent in patients with old syphilis to find evidence of an aortitis—pain under the sternum, angina attacks, a dilated arch, an accentuated aortic second, a systolic aortic murmur, insufficiency of the aortic valves. Conversely the determination of such signs without satisfactory explanation should suggest the possibility that the patient has had syphilis. A young woman observed last year in hospital had syphilis of the nervous system, a large liver and a dilated aortic arch with a systolic aortic murmur and accentuated second. In a case cited above of diplopia with pleocytosis, there was an aortic insufficiency without history of usual infectious causes. The frequency of aortic insufficiency in tabes is well known. Myocardial insufficiency in young or middle-aged men rests not uncommonly on a syphilitic basis, and will be benefited far more by mercury than by digitalis. Mueller and Rogge from Struempell's clinic have lately emphasized the frequency of diseases of the circulatory system as a result of syphilis. (Tabes dorsalis, Erkrankungen der Zirkulationsorgane und Syphilis. Deutsch. Archiv fuer klinische Medizin. Bd. 89, S. 514.)

9. *Nervous System.* It requires but a few words to elicit the important suggestive history of lancinating pains, diplopia or sphincter disturbance. A few minutes suffice to examine pupils, to test the knee and Achilles jerks, to determine ulnar hypalgesia or hypalgesia over the trunk, to glance at the eye grounds, and yet the facts so determined may be of far reaching importance in diagnosis and treatment. Erb has recently contributed a valuable paper, "Ueber die Diagnose und Fruehdiagnose der Syphilogenen Erkrankungen des zentralen Nervensystems." (Deutsche Zeit f. Nervenheilkunde. Bd. 33, S. 425.) He recalls particularly the diagnostic help of lumbar puncture in determining a lymphocytosis of the cerebrospinal fluid, "in zweifelhaften Faellen, wo der klinische und anamnestische Nachweis der Syphilis nicht gelingt, der Nachweis der spinalen Pleocytose das Vorhandensein der syphilitischen Durchseuchung in hohem Grade wahrscheinlich macht, ja fast sicherstellt, wenn alle klinischen Momente genau erwogen werden." In several syphilitic cases in hospital recently lymphocytosis of the spinal fluid has been determined, both in presence and absence of nervous symptoms, but it would seem a sign to use only in correllation with other findings.

10. *Unclassified Signs.* Justus hemoglobin test has wisely been abandoned. The curious intolerance of old syphilitics toward minute doses of copper reported by Brice (*Med. Rec.*, Nov. 10, 1903) has not been tested.

Certain trophic disorders may suggest syphilis—the painless loss of teeth, perforating ulcers, Charcot joints. During the last year two methods of diagnosis by serum reactions have been elaborated and extensively published. These are the precipitin reaction and the method by fixation of the complement. Review of literature may be had in the article of Erb quoted above.

Syphilis is a common disease amongst us. We meet it under many masks and in many unsuspected places. Its symptoms are legion, its signs protean. It strikes often at long range, and may attack almost any organ, and may injure in varied ways. A review of the signs that may be read as we run has seemed not unnecessary in light of my own and others' shortsightedness.

SYPHILIS AS SEEN BY THE EYE, EAR, NOSE, AND THROAT SPECIALIST.*

By HAYWARD G. THOMAS, M. D., Oakland.

In considering this subject, my conclusion is that we specialists see a great deal more of syphilis than we should, for the reason that it is the least recognized and the poorest treated disease in general.

* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

Sometimes we see a case that comes with a diagnosis of syphilis from a general practitioner. The majority, however, we discover for ourselves, and where no previous diagnosis has ever been made. Some of these are the innocent wives or children of syphilitic men; others who know they have the disease and give a history of some months' treatment for it anywhere from five to twenty-five years before; others who have had all sorts of symptoms and signs, and have been treated for all sorts of things—"catarrh," "sore throat," "malaria,"—and we find old scars in evidence in the soft palate and pharynx or a pronounced retino-choroiditis—the first sign of cerebral syphilis—and so on, through a long list.

Whose fault is this? The patient's mostly, for the average patient quits after the to-him-visible lesion is cured. The profession at large is at fault for the rest, for so many intelligent men tell us that they were treated for several months and discharged as cured, and I find that it is, or was, the view of not an inconsiderable number of the profession that many cases needed little treatment and will get well of themselves. The laymen know or learn just what we teach them so the onus is on us. Hence my statement that it is the least recognized and poorest treated disease.

We specialists see but rarely the primary lesions, and not much oftener the ordinary secondary lesions. Therefore, it will be mainly the tertiary lesions that I will bring before you, and instead of citing a lot of cases, I will deal with them principally in view of their diagnostic value.

Syphilis is the one disease that comes most largely into the etiology of eye diseases. Let us take a list of the principal ones:

Iritis, acute and chronic.
Irido cyclitis, irido choroiditis.
Phlyctenular keratitis.
Interstitial keratitis.
Paralyses of ocular muscles.
Periostitis of the orbit.
Tumors of the orbit.
Ptosis, especially bilateral.
Many lacrimal strictures.
Deep scleritis.
Retino choroiditis.
Many juvenile cataracts.
Optic neuritis or papillitis, with hemorrhages into retina.
Optic atrophy.
Ocular symptoms preceding the others, of Tabes.

Notice that it attacks every tissue of the eye from the cornea to the optic nerve. Of iritis, sixty per cent are credited to syphilis, usually in the secondary stage, and about thirty per cent to rheumatism, but what I can learn and have been shown of old rheumatic cases, the pains and tenderness have very frequently been found in the middle of the long bones, and the pain mostly at night, too, so I have my doubts of the thirty per cent due to rheumatism.

Consider the large number of cases of interstitial keratitis we meet; always hereditary syphilis, and from patients of whom we can elicit no knowledge of causes. We get syphilitic history plainly when we question the parents, but no history of treatment. One recognizes at a glance the dish-faced creatures with their aged look, the rhagades around the mouth, the notched and pegged teeth, and generally dull appearance which accompanies these cases.

Irido choroiditis is not so uncommon, and I remember Bergmeister of Vienna saying that if the Pope himself came with this eye disease he would say syphilis.

Many cases come that have such slight signs that we can only suspect, but it is the suspicion that often puts us on the right scent; the presence or absence of other confirmatory signs besides the therapeutic test telling the tale.

Not infrequently we are tripped up by the, apparently, refraction case that comes in to be cured of her chronic headaches, supraorbital usually. There is also often a little middle ear trouble, just a suggestion of hardness of hearing, may be a little tinnitus. All these symptoms are common enough not to excite suspicion at first of syphilis. We find in the beginning that the visual acuity is not of the very best, though not sufficiently below the normal to excite comment. Neither do the glasses increase the vision, and the patient soon comes back with her headaches. Inflation of the ear does not help her as it should in such a recent case. We examine the fundus again; there is a faint suggestion in the vessels and color of the retina and nerve that they are a little off-color, which did not impress us before. We have, simply, tripped up. Taking or sending the patient to a general practitioner, the body is gone over thoroughly, the suspicion of syphilis is confirmed, and the "off-color" of the nerve and retina was the first stage of retino choroditis.

On the other hand, while we are smarting under this slip, comes a fairly young person with all these symptoms well marked—distinct loss of visual acuity with a slight refractive error, marked dullness of hearing, growing lack of comprehension, vacancy of facial expression, slowness of walk,—all these combined with undoubted retino choroiditis, and there is no doubt of the diagnosis.

Take another type: an elderly man comes in, introduced by his parson. I notice that the man is cross-eyed, and that is what he came to see me about. As he took hold of my hand, I noticed there was no grip whatever. His eye trouble was of a couple of months' duration. He had been treated by two general practitioners of standing, for stomach complaint, that, of course, to them being the cause of his eye affection. Elixir Lactopeptin I. Q. and S. from one, and I know it was a popular iron nostrum from the other. Looking further, I saw he had a facial paralysis, very slight but plainly brought out; plenty of scars in his soft palate and pharynx for which he had been treated three months the year before, but with no suggestion of specific trouble or treatment indicating a suspicion of it. I took the man at once to a G. U. specialist who immediately stripped him. The patient was like a sandwich

man; with signs all over him. I really find no excuse for the failure to recognize this case as one of syphilis, except the great rush to prescribe for a symptom and "call the next case."

The nose and throat do not present such a variety of lesions as the eye, and the ear reveals but little of interest in a diagnostic way.

In the nose and throat we see usually only the tertiary lesions. We find severe and extensive lesions involving the mucous, cartilaginous and bony parts. There are gummatous nodules or diffuse inflammatory processes in the submucosa. Untreated, the gumma breaks down as it does elsewhere, and foul, deep erosions take place. The bones and cartilage, being attacked, become spongy, honeycombed, filled with granulations, the bone being finally cast off. If extensive, I have only to mention the saddle nose with which you are all familiar. These tertiary lesions are hard to mistake. In the first stage, there are swelling and redness of the membrane, septum doughy, and all parts looking like stuffed cushions. The membrane becomes soon markedly paler, peculiarly so, and this is preliminary to the breaking down stage. Untreated, we soon see this, and we usually find a conglomerate mass of granulations, all landmarks gone as to what is septum or turbinate, discharging profusely and stinking horribly.

I find not a few cases of nasal polypi combined with antral suppuration, due to syphilitic necrosis in the ethmoid cells. After having cleaned out several nasal cavities and finding antral suppuration that others had overlooked, and then suddenly finding some tertiary ulceration in the soft palate, I concluded I was not a miracle worker myself.

This is not the history always, and we find cases that have gone a milder course, leaving a perforation of the septum, and possibly necrosis in the ethmoid, which keeps up for years a chronic little discharge. In diagnosing a case, if you had one come to you with severe crisis headaches, perforation of septum and necrosis of the ethmoid, would you give syphilis a passing thought?

We cannot overlook the otitis media cases that have been lightly touched on before. These may come either from the secondary patches around the eustachian orifice or gummata or tertiary ulcerations in the same locality. This subject is alone worth a longer and entire paper.

As syphilis tends to glandular enlargement, I wonder if sufficient thought has been given to it as a factor in the etiology of adenoids and tonsils, especially when the infant is born with an enlarged adenoid and has the snuffles, for, unfortunately, I know adenoids are not recognized in infants even when the poor things cannot nurse on account of "the snuffles,"—the direct result of adenoids.

Now, when all the children of a family have enlarged tonsils and adenoids from their entrance into this world, a certain proportion of these cases, I am certain, is from syphilis; but the question of these glands is not discussed as it ought to be and that could well be considered at some other time.

The larynx comes next and cannot escape you for everybody knows when a man is hoarse, and you cannot ignore syphilis when you are considering the larynx. You will consider tuberculosis, lupus, carcinoma, and syphilis. The majority come down to the great two, tuberculosis and syphilis. Sometimes you forget that you can have both these in the same box, and only treat the one. And do not forget that. I will not go into the differential diagnosis. I have only tried to tell you what the specialist sees in his regular work, and the things that make him constantly on the lookout for syphilis, and why. We specialists cannot forget it for a minute, for it crops up in so many forms that we have less excuse for overlooking it than the general practitioner.

SYPHILIS OF BONES AND JOINTS.*

By S. J. HUNKIN, M. D., San Francisco, and GEORGE A. HARKER, M. D., San Francisco.

In speaking of lues as it involves bones and joints it appears best to give the salient points of a few case histories, not as a report of cases, but rather to present ordinary types as they appear with their characteristic marks to the orthopedic specialist. We are not intending to consider in this connection the trophic joints, for they are not luetic in the sense of this paper. Also we shall not speak of the classical hyperostosis of the tibia for you are all familiar with it. We shall rather deal with pathological conditions, which although fairly certainly syphilitic, are not usually suspected, and which are much more often encountered than we were wont to believe. They come to us labeled "growing pains," "rheumatism," "traumatic conditions" and the severer types are usually considered tuberculous. The part played by traumatism in the history of so many of the cases is so definite that we are led to consider it a factor—a factor not in the dyscrasia of course, but in the development of the bone or joint manifestation. This record of injury is not the somewhat indefinite remembrance of a fall or a twist which is so often remembered after the development of a tubercular osteitis, but rather there is the story of the injury, the bruise, the swelling, the disease, all following so closely on one another that it cannot be disregarded. It is, however, true that a tuberculous osteitis may develop rapidly upon an injury, but generally there is a period of ordinary function intervening.

Case 1. Girl 12 years of age. Family history negative, excepting that the mother is in an insane asylum. Diagnosis. Right hip disease of 4 years' standing. Severe type with several discharging sinuses. There was not so much shortening as is usual with so extensive disease, after such a period, though the significance was not realized at this time. The child also had spina ventosa of the 1st metacarpal bone in one hand, and of the 3rd metacarpal in the other. She did badly while under observation for several months, then the hip was resected, but she still did badly both locally and generally.

A sister was then noticed to have keratitis and Hutchinson teeth, and stigmata of syphilis were demonstrable in other members of a large family. The patient also, on further examination, was found to be developing fairly typical teeth which had before passed without comment. Under specific treat-

* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

ment the girl was healed, both hip and hands in a few weeks, was fat and ruddy, and has remained well. The father died during the past year with aortic aneurism. Beyond doubt this hip was sacrificed, at a time when the stigmata were present, the multiple bone lesions were characteristic, and lues should have been suggested months before the operation.

Case 2. Girl of 6 years. Synovitis of the right knee, followed in a few weeks with a similar condition in the left knee. Family history negative. The swelling and effusion was accompanied with little or no pain, but with tenderness on pressure. On moderate doses of KI, the child soon recovered Hutchinson has with truth said, that double knee joint synovitis of children, developing synchronously, or in close sequence, without any definite reason, can be considered luetic. These cases are not rare, and are usually mistaken for rheumatism. The children often have repeated attacks, which may occur earlier than the specific keratitis, or the specific teeth, and the diagnosis is rather important.

Case 3. Boy 6 months old. Italian. No history of lues obtainable. The child had not been nursed, and the feeding was execrable. During the last two months the joints of the extremities have thickened and ulcerated. The disease involved the shoulders, elbows, wrists and ankles. In all 14 lesions were evident. There was no skull involvement. Several points had perforated and presented small pin-hole openings. Bare bone was found in every place sought. The child continually fretted, though the passing of a probe to the bone caused no particular flinching. Mercurial inunctions with improved feeding over 4 weeks produced the healing of all wounds, and movable joints without apparent pain. A moderate thickening of the ends of the bones alone remained. The diagnosis of scurvy had been made, but the age, the absence of hemorrhage, the joint mobility, the comparative freedom from pain were against this. This type is fairly common. The multiplicity of lesions, with their chronic character and open sinuses point conclusively to lues. This particular child did better than usual. They generally die after a few months, and when they survive a few years they are miserable, stunted, hairless, deformed creatures. They are also prone to a secondary tuberculosis, and the symbiosis is not happy.

Case 4. Boy 5 years of age. Italian. No family history obtainable, though mother is noticed to have all the neck glands enlarged, and while we have had the boy under treatment she has had ptosis, and facial paresis. She will not permit examination. The child had a typical appearing knee with fever, night cries, tenderness and deformity. The diagnosis of tuberculosis had already been made, and we agreed without reservation. Later the child developed a large gumma above the sacro-iliac joint, and soon a second gumma in the right thigh. The boy was then given KI, and although he has not taken it regularly the lumbar gumma has disappeared, the knee has developed painless motion to half normal extent, while the thigh gumma is represented by three small loculi. In the interim the mother has had ptosis and facial paralysis which she has herself cured with an Italian medicine.

Case 5. Boy 6 years of age. Father died from what appeared to be specific cerebral disease. Last summer the child suddenly developed pain, lameness and spasm in the left hip with night cries. Because of the family history, and the sudden onset, he was given KI, and all symptoms cleared up within a month. During the last few weeks the child has had an attack of pain and tenderness in the right foot, which recovered in 10 days under similar treatment. These attacks could be taken for rheumatism, but in each instance there was no fever, no heart involvement, and but a single joint, which rapidly cleared up under specific treatment. These points while not conclusive are suggestive.

Case 6. Girl baby, a few weeks old. She was seized suddenly with fever, pain, swelling and tenderness of the left hip. The swelling rapidly increased, and within a few days the femoral head was extruded. She recovered under gray powder and inunctions, and is at present about 16 years of age, in good health, but with a fairly typical facies of hereditary lues. Syphilis in parents was denied. The girl now has a strong leg, with almost normal motion, and a shortening of only 4 to 5 cm., a result hardly to be expected after epiphyseal destruction by tuberculosis or from a staphylococcus.

Why the limb growth is greater after the loss of an epiphysis by lues than after its destruction by tubercle, etc., we do not know, but it has appeared to be so, not alone in this case, and not only in the hip, but we have seen it also in the knee, and in the elbow. Whether the thickening and hypertrophy of the periosteum which so often characterizes syphilitic bone disease in later life, is also present in this fulminating expression of lues, and if so whether this periosteal overgrowth favors restitutio beyond what we find after other infections, we also do not know; but it seems probable, and would account for what we have various times observed, and cannot otherwise explain.

Case 7. Man 35 years of age, in second stage of lues, and while under treatment, is attacked with swelling, pain and loss of function in the hands, especially of the first metacarpo-phalangeal joint. Radiograms show an osteitis of the distal ends of all the metacarpals; also in the distal ends of many of the proximal phalanges. Pushing the mercury it got well, leaving practically no trace. This osteitis is frequent and is mistaken for rheumatism. It may be the only evident symptom of the noncontrol of the disease, and while it often clears up under vigorous treatment it may progress to great destruction of bone and much deformity.

Case 8. Young woman. Trained nurse with a left knee of 9 months standing, which was considered tuberculous. There was much thickening over the joint cavity, and considerable tenderness, especially at the joint line, but little or no pain except after use. No nocturnal pain. No deformity, except a moderate flexion from the tension. This absence of deformity after such a period would be rather an uncommon feature in tuberculosis, but failed to arouse suspicion. Opening the joint demonstrated a small oval area of tibial cartilage, and a small area on each condyle, peeping out from a gummatous mass which completely filled the joint. It had the appearance of a neoplasm and was evidently not tuberculous. It was now remembered that the girl had sparse hair, scant eyebrows and had given a history of sore throats. The knee was closed and as soon as practicable she was given antiluetic remedies and recovered.

Such joints are not rare. We have recognized several since which have recovered under appropriate treatment, while we remember our failure to appreciate others in earlier years. One woman in particular had just such a knee, later an elbow and still later a shoulder. The attacks eventually receded, leaving definite damage in the first two joints, and considerable destruction in the shoulder. The etiology passed unsuspected by us, and apparently so by many other surgeons. She had lived

some years in South America and we freely confessed to her that we did not know the cause of her trouble, but suspected it was due to some uncommon infection contracted in South America. Experience, however, has taught us that while this particular patient perhaps contracted her disease below the equator, similar infections are not rare here.

Case 9. Man 35 years of age with definite luetic history. Suffered severe hardships during Russo-Japanese war. Feet gave out during severe march, and he has been crippled ever since. Clinically he had flat-foot of the type which one associates with gonorrhea. Radiograms, however, show nodes on the lower end of the tibia, on the astragalus and on the metacarpals, but no sign of the spur-like osteophyte seen in gonorrhea. The pain was relieved by large doses of KI, after which the usual treatment for flat-foot gave comfort and allowed the man to resume his work.

We have seen several such cases, one in a barkeeper at present under observation in whom the diagnosis of lues was made from a radiogram of his feet. We are not to be understood as believing that any bone pain which is definitely relieved, or any joint pathology which is definitely cleared up by KI is *ipso dicta* syphilis, for we strongly hold that such result cannot be accepted as proof. We are in the habit of giving iodides to most patients with osteo-arthritis and we believe with benefit. KI also in ordinary doses often speedily relieves the pain of ordinary flat-foot and especially when redness and swelling accompany the pain. This relief can be expected when there can be no question of lues. The so-called "therapeutic test" proves nothing when no lesion characteristic of lues is present. The condition described in Case 9, is, however, quite typical. The periosteal and perichondrial nodes are characteristic and found, so far as we know, in no other disease. If the "therapeutic test" alone can be accepted, what is to be said of the following cases:

Case 10. This represents one of three cases which we have seen during the last 2 years and excepting for sex and some slight variance in age, one description answers for all. Girl 16 years of age. Some years ago she had the shaft of a long bone removed for osteomyelitis, due to the staphylococcus pyogenes aureus. She has since been subject to acute attacks of swelling of the shaft of a long bone (not of the bone which was resected) accompanied with excruciating pain and tenderness. The attack has usually been in the right humerus, though it has occurred in the left femur, and in the left humerus close to and perhaps involving the elbow. The swelling is deep seated, involves the whole circumference and does not affect the superficial structures. The tension is extreme. KI in large doses promptly relieves the pain and removes the swelling. Between attacks nothing is evident. In each case we know the whole family and have gone over the different members again and again and do not at present suspect lues as a cause.

Case 11. This represents another group of 3. Two are young adults of 16 to 18 years, and the third a man of 35. History negative for lues. In the two younger patients we have also examined both older and younger children in the family, as well as the parents, and have at present no suspicion of a syphilitic origin. The man's history (except that he has had a single attack, and the others 2 and 3 attacks) is typical of the group. After a blow on the tibia the bone promptly became hot, swollen and tender and has so remained for nearly a year despite all kinds of treatment. Examination shows swelling on the tibia extending from the epiphyseal line downwards about 10 cm. It was softened in the centre and was periosteal in character. It was more tender than painful, and the pain was not particularly nocturnal. It entirely disappeared in three weeks under large doses of KI. Was this lues? There is no history—no other evidence. We would disregard this in a single case, but if so the younger patients should have shown something, or some slight stigma should be observed in some member of the family.

Discussion.

Dr. T. W. Huntington, San Francisco: There are two or three points which have suggested themselves to me during the reading of two of the papers, to which I want to call attention. I appreciate heartily the idea of the advocacy of early active treatment in the initial stage of the initial lesion. I know of no medical heresy which has given rise to so many unfortunate incidents as the teaching of ten or twenty years ago to the end that we should not begin our treatment until we have made our diagnosis. Others will bear out this statement. It seems to me, as in other things, the diagnosis can be made without waiting for the subsequent incidents in the progress of the disease. The second point is with regard to the close relationship existing between malignancy and the later stages of syphilis. Attention has been called by a number of authorities to the frequent grafting of cancer upon an old syphilitic lesion of the tongue. I have seen two or three such cases where cancer of the tongue is very clearly manifested upon the ground work laid by the syphilitic patient. This point also holds good with the rectum. These cases have been manifested in my experience. The final point is to give my approval to the idea that there is no such thing as radical cure for syphilis, when we hear that late symptoms appear as far after as 20, 30 and 40 years. The medical man should educate the people on this subject. It matters not that the prodrome seems to be clear. It matters not that the husband may live with the wife for many years without having the innocent person affected. The fact that the first person was attacked may give rise to symptoms at a late period. This point should be taught fully and completely.

Dr. W. T. Barry, Santa Barbara: I was especially interested in the paper which Dr. McBride read on cerebral syphilis. [Paper not received for publication —Ed.] I once knew a gentleman, some years back, who accidentally mentioned to me that he had an initial lesion. He did not mention this to me consulting me, but as an act of confidence, when in my office one day he showed me the lesion. It was a hard chancre. Some years after that I was requested to go to a certain city after this gentleman, who was in a state of insanity. I was told that he had been drinking hard and that something would have to be done with him. I went after him and persuaded him to return home with me to Chicago, and accidentally remembering the lesion which he had showed me I had the clew to this insanity. I gave him iodid of potash in enormous doses, and I had the pleasure of seeing that insanity clear up and his mind return to him perfectly. It was a beautiful exhibition of what iodid of potash will do. What has impressed me is the necessity for the general practitioner to assume the responsibility of warning his patients to leave alcohol alone. There is nothing more pitiful than to see a man of some prominence utterly lost and finally dying from the effects of this disease. I think the conscientious physician should caution all such cases. As Dr.

McBride says, these lesions come on ten, thirty and forty years after the initial trouble.

Dr. A. B. Grosse, San Francisco: The proposition is this. Just as soon as we are sure of our absolute diagnosis we can begin treatment for these cases. This is very simple. Any man who has the technic of finding the spirocheta can easily find them from the smear, and in many cases the primary ulcer may be removed. In my opinion, the spirocheta can be found in the section. The late work with the serum has shown the absolute result of the test of the serum, showing that upon the finding of the primary sore the reaction is absolute so that you can be sure of your diagnosis. The inunction treatment is the oldest and the best that can be satisfactorily carried out in most cases of syphilis. There are a number of cases where, for social reasons, this treatment can not be carried out. Most men, as well as many women, are ashamed to have the stain of their shame upon their body. The internal administration of the drug carried over a long period of time renders the system more liable to malignant disease. Now we are having demonstrations of the hypodermic injections of this drug. These are divided into the soluble and insoluble salts of the drug, and I agree that the bichloride is the simplest and the best. People are more willing to take this drug than they are to take the inunctions. There are certain people in whom there are infiltrations following the administration of this drug. Then we have the mild soluble salts. The salicylate of mercury is mildly soluble in the presence of a medium containing albumen. There are, unfortunately, infections in syphilis so rapid that we can not combat them. I can not strongly urge the use of calomel or gray oil. There is a tremendous oblique action to this drug and salivary poisoning.

Dr. E. E. Kelley, San Francisco: I wish to call attention to the treatment of cases of hereditary syphilis and its influence on intercurrent disease. I have under my care a family of children who have inherited syphilis. Only one child has shown any extreme manifestations of the disease. I have noticed that in the treatment of intercurrent diseases in this child, there always seems to be a decided aid in the control of it by the use of antisyphilitic treatment. I think that every practitioner ought to bear this in mind in the treatment of these children who have inherited syphilis with other diseases. Another point is that many diseases not syphilitic will show decided improvement upon the use of iodid of potassium. So I believe that it is not always proper to say that because a disease gives in to this treatment that it is syphilis.

Dr. E. D. Chipman, San Francisco: There are several points in the treatment of this disease which are often overlooked and which may be of distinct value in the diagnosis of the disease. We all know how easy it is to overlook the primary lesion or even the secondary manifestations on the skin. We very often encounter the so-called syphilitic leukoderma which occurs upon the neck, which consists of placques, round or circular, of deep pigment and hyperpigmented. This is not to be found with the usual skin manifestations which may occur on any part of the body. The leukoderma has special preference for the neck. Another point emphasizes the remark of Dr. Huntington, concerning the special ease with which malignant epithelioma affects the tongue of syphilitic subjects. There are some authors of Paris who strongly insist that all epitheliomata of the tongue are of syphilitic origin. It is certain that all epitheliomata of the tongue should always excite our suspicion.

Dr. M. Regensburger, San Francisco: The treatment of syphilis, if carried out in a certain routine without doubt will bring the patient into good condition. The treatment should be begun as soon as the chancre is diagnosed. In secondary syphilis, I have been giving the pill 1/25 grain bichloride of mercury, 1/25 grain of opium, giving 3 pills three times a day. This is a clean treatment and causes no inconvenience. Sometimes the manifestations occur very rapidly. So far as the injections are concerned, you will find that you drive your patients away if you continue your injections. I very rarely give injections. The results with the pills are magnificent, and your patient is pleased with his medicine and with the treatment. In tertiary syphilis, I give the iodid of potassium, beginning with 20 grains and going up to 200 grains, increasing the dose every four or five days. I continue this for four or five months, and then cease and go back over the same ground. It is a simple treatment and you will get a good result.

Dr. F. M. Pottinger, Pasadena: I sometimes think that the medical profession should remember that rest plays a part with syphilis as well as tuberculosis. I have treated with interest these cases with tuberculosis. About two years ago a case was under my care with double involvement of the lung and also trouble with the larynx. I was convinced of the effect of rest on syphilis, and iodid having been used, I put the case on both iodine and tuberculin. Very soon the larynx healed and the patient was able to swallow. With my method of treatment, I have used especially a treatment called orthoform. I used this for a month and then let the patient rest. Then I treated her afterwards with tuberculin. Finally she left, with the pulmonary condition healed but the larynx not. She went back home to St. Louis and got worse, and one day she was taken with great pain in the larynx and sent for a physician in the neighborhood. He did not look into the larynx, but from her description gave her a prescription for iodid of soda and the effect was wonderful. In a short time her larynx was well and she was put on a combination of tuberculin and iodine, and in less than two months the expectoration and cough had disappeared. I have come to believe a great deal in the statement made by Stengle that there is a certain sign which seems to indicate inherited syphilis. This is difficult to describe. We find it in the middle and posterior lobes, between the scapulae. You have a feeling of a sort of ballooning up at the end of a deep breath. You get about the same sound if you put your head under water. Stengle says that when he finds that sign he always uses iodid, and I have followed it out with very good results. He thinks it is the effect of inherited syphilis. I think there is something in it, and I know that many cases have done splendidly when the iodid is given.

Dr. A. Hoisholt, Stockton: I just wish to say a few words with regard to the differential diagnosis of cerebral syphilis. Dr. McBride laid great stress on the apathy in that trouble. There was a time, perhaps, when general paresis was spoken of in classical form. It was more prevalent then than now. It is practically almost impossible to make a diagnosis between syphilis of the brain and general tabes or pseudo paralysis. It is a well-known fact that general paresis is met with in different forms. You have the so-called classical dementia form and the euphoria is present. I have seen cases where you would have some apathy exactly in general paresis as in syphilitic brain disease, and I think it is impossible to make a diagnosis from the mental symptoms from the way the ideas are expressed. The diagnosis must rest upon the whole picture, and especially upon the systemic symptoms and their development.

Dr. Jackson, Pasadena: I remember a case of congenital cerebral syphilis in a girl of 15. A practitioner had been watching the case for three weeks.

There had been great suffering from severe headaches, but the practitioner, who was a man of experience, turned the case over to me with only the suggestion that the age of puberty probably had something to do with the headaches. At my first visit I found her lying asleep in bed with the mouth open. I noticed immediately the Hutchinson teeth. With the history of three weeks' headaches, I made the diagnosis of cerebral syphilis. The practitioner who had been caring for the patient had not had that in mind. The father of this girl had been a graduate from Bellevue, but did not seem to recognize the condition present. She seemed better and I waited for 24 hours, and I thought that if she were still better I would not change the medicine. Twenty-four hours later when I went there, they said that she had been sleeping continuously and that they had not disturbed her. She had not urinated and the father seemed perfectly contented with the situation. I insisted upon seeing the patient and found an inter-cerebral hemorrhage, hemiplegia and aphasia. Upon further examination, I found the keratitis and the history brought out the fact that there had been an attack of keratitis when the child was five years old. Further examination showed a scar of the tibia. There was also an exudate. I gave iodid of potassium. The father told me that when the child had had the attack of keratitis, when five years, that the oculist had said that it was syphilis and that he had insisted that it was not. The aphasia practically disappeared and in about two weeks the second attack of atypical apoplexy with interference of the respiration came on. I know of another case of cerebral syphilis with headaches. The patient went to the drugstore and the medicine was used without effect. Careful examination of the urine showed diabetes and by exclusion I called it syphilis. For the sake of family relations, I could not tell the wife. I suggested a consultant but they did not want one. I told the patient that he might be worse, but could not be better before three days. He got better, and afterwards they telephoned to me and said they had sent for another doctor. This practitioner took care of the case from 1 until 7 the next afternoon without making a urinalysis, and the patient was unconscious, having convulsions and in a deep stupor. The other practitioner had taken him off the medicine he had been given.

Dr. C. M. Cooper, San Francisco: It seems to me that we should endeavor to carry away from such a meeting as this some of the principles underlying this subject, and I would venture to advance: 1. That many mistakes have been directly due to insufficient examination, physicians taking for granted the apparent. As an example, I will refer to a lady who has come under observation at three different periods of her history, the first time relative to an opinion concerning the treatment of a supposed recurrent epithelioma of the lower lip, the second time some two years later relative to a big tumor of the tongue, the third time a few months since because of large ulcerations on the soles of the feet. The supposed epithelioma had been removed by a surgeon of repute. The tongue was to be amputated by a well-known operator, and the ulcers had been treated in a sanitarium with all manner of electricity and wave light. On each occasion she bore on her person such definite evidences of syphilis as to have made the diagnosis patent to any one had he thoroughly examined her. 2. That syphilis is the arch imitator of all diseases, but just as a copy of a picture lacks some of the distinctive features of the original, so the imitation of syphilis is not absolutely true. Therefore, when we meet with diseased conditions which are atypical, let us think of syphilis. E. g., given a patent with a huge knobby liver, we naturally think of secondary carcinoma, but if we find a history of 8 or 9 years we should suspect syphilis. Again, take a case of psoriasis, the patches presenting indurated edges, our minds again recognize the slight departure from the typical picture of psoriasis, and again we should think of syphilis. 3. Syphilis is a disease which shows itself by a multiplicity of lesions. Take, for example, syphilis of the nervous system, here brain and cord lesions occur together with comparative frequency, and such multiplicity of lesions should make us suspect syphilis. 4. When in doubt in cases of disease of the central nervous system, whether a lesion is syphilitic or functional, let us remember the value of a cytological examination of the fluid withdrawn by spinal puncture from the subaraehnoid cavity. 5. In treatment, let us remember that we must be sure our patients are getting the mercury we prescribe. The mistakes I have made have been occasioned through believing unreliable patients. That many patients suffering from syphilis of the cardiovascular system should be put in bed whilst being treated, as mercury and potassium are depressants. That in cases of undoubted cerebral gummatous syphilis of unknown location where our medication is without result, and optic atrophy developing, let us remember the value of palliative decompression trephining.

Dr. A. F. Gillihan, Berkeley: For example of "once a syphilitic always a syphilitic," I can report a case of a young man in Edinborough, who had acquired syphilis and who went to one of the most prominent physicians of that town twenty-five years ago. He was under treatment for three years. Two years later he married that physician's daughter. Since then they have had two children, who are apparently perfectly healthy. About two years ago the man came down with a typical cerebral and spinal syphilis, which responds readily to inunctions and K. I. Within the last year, the wife, who had always been perfectly healthy, has come down with a trouble in the anterior mediastinum which responds to K. I. and to mercury, undoubtedly being gummata.

Dr. Benj. Swan, San Francisco: Some years ago I was in Portland and a surgeon there said to me, "Whenever I am in doubt, I always treat for syphilis." Some years ago a young couple were married in San Francisco. In due course of time I delivered the lady of a fine boy. Everything went on well, but when the child was 15 months old, after going through the teething, it began to cry at night. I stripped the child and examined it from head to foot, but could not find anything out of the way. The child persisted in crying at night and waked up the neighborhood. There was no sign of syphilis. I could not find the first indication and could not imagine what the trouble was. A few weeks after that the father came into my office, and asked me to look at his shin and there was the characteristic trouble. I asked him whether he had ever had syphilis, and he replied that he had had it four years ago but had gone through thorough treatment. I then immediately called upon the child again, and examined it from head to foot but could find nothing. I prescribed bichloride and iodid and in three days the child had stopped crying. I pushed that child on to adult doses, and had the satisfaction of seeing it never sick again with any trouble, and two years ago I attended his funeral at the age of 25 from acute pneumonia. When I first came to California I was very closely associated with Dr. Sawyer. He told me that I would find that people did not bear mercury as well here as in New York and that I would have to treat with tonics. That has been my experience, and I found that you just have to crowd your tonic treatment.

Dr. Chas. Levison, San Francisco: There was one point brought out by Dr. Cooper with regard to

the palliative trephining. This, I think, is one of the most important factors in the treatment of a foeal cerebral syphilis. Many of us have had the experience of the treatment of cerebral syphilis and making the diagnosis on aceount of the previous history, have administered large doses of mercury and iodid of potash without any apparent result, having the case go on to a fibrous gumma with the resulting condition which is impossible to remedy. Palliative trephining can be done if we have anything like foeal manifestations. I have seen Sir Vietor Horsley do this operation and mercurialize the brain with a solution of 1/100 bichloride of mercury, a procedure most astonishing, and is able to do this procedure without any apparent trouble. The trephining is a comparatively simple matter, and he seems to handle the brain without injury to the patient.

Dr. A. S. Lobinger, Los Angeles: In the differentiation of syphilis from carcinoma, which is a most important one in the involvement of the tongue, I think too great care ean not be shown. Many of these cases have come to the surgeon with a diagnosis of careinoma when the ease has shown, on further examination and development, to have been one of tertiary syphilis. It is a very serious thing to remove the tongue or do any operation on it unless there is a very good reason for it and unless there is eertain malignant involvement. I was mueh impressed with the remarks made by Dr. Cooper. The failure in the treatment of syphilis and in the diagnosis has risen in the majority of instanees from earelessness or indifferenee on the part of the patient, espeeially in following out the treatment, also on the part of the physieian in not having exaeted that diseipline and persuasion whieh is necessary to obtain the result. The last speaker mentioned Sir Victor Horsley and his work. I am sure that that is a great field, and I have talked with Horsley many times about the treatment of gummatous growths in the cerebrum where the pressure symptoms were so marked that there was not time to make a differential diagnosis. He reported to me most astonishing results obtained by trephining and making the osteoplastie flap. These cases are very important from the standpoint of the immense relief that can be given in a case of thrombus destined to be fatal. I have seen cases of gummatous development in which it was absolutely impossible to differentiate, exeept as revealed at post-mortem, between the diagnosis of sarcoma or glioma and that of gummatous growths. I have seen as much as 600 grains of iodide of potash given in 24 hours without the slightest result. The pathological examination proved it to be gummatous tumor. Such a case as that has been reported by J. T. Eskay. He emphasizes the fact that in those cases you can not give too much care to them. Leukoplakia is not necessarily an evidence of syphilis. When it is found in conjunction with the other manifestations it may be depended upon. Yet I have observed it as a later manifestation and one in which the diagnosis should have been made from the other symptoms much more than from the leukoplakia itself. I believe that leukoplakia, if found in conjunction with the development of the tumor of the middle or dorsum of the tongue, may be almost pathognomonic. It may be that it represents that intermediate stage from a syphilitic stage instead of carcinoma. The treatment should be instituted long before this development.

Dr. Geo. Cole, Los Angeles: This subject has been very well covered and has been very interesting. There was one point which was hardly emphasized enough. That is in the treatment of syphilis, speaking from the standpoint of the general practitioner, that we must individualize our cases. All cases of syphilis ean not be treated alike or with the same amount of mercury or potassium iodide. There is the general impression that as soon as we have diagnosed our case that the patient must have all of the mercury and iodide we ean possibly get into the system. We should be eareful and not overdo the thing. There are many cases that are overtreated. They are given too much mereury and too much iodide of potash. We should remember that the proper treatment for syphilis is the tonie treatment, and when we give iodide or mereury to the point that the patient beeomes depressed, we should lessen the dose.

Dr. Stanley Stillman, San Franciseo: It seems to me almost presumptious to speak of the neeessity or advantage of diagnosis, or of eareful attention to the diagnostie point as between syphilis and malignant disease. The point has been made over and over again. My experience has been at varianee with most of the speakers in that I have had experience with a number of eases in which the diagnosis had been syphilis when it should have been malignaney and where, if there had been anything like a eareful examination, syphilis would have been eliminated. Cancer of the lip oeeurring in young men 24 and 36 years of age is not uneommon. I have had 6 or 7 sueh eases, who had been treated with anti-syphilitic treatment until the time had gone when the surgeon could have done any good, because malignant disease is so rapid in these eases. Also with regard to leukoplakia, I have seen many cases of epithelioma of the tongue and of the mouth, of the buccal cavity and eheeks and gums, developing on the site of an old leukoplakia and in patients in whom syphilitic origin was out of the question. One man died a few months ago having been under observation four times, operated upon three times for recurrent carcinoma of the mouth. He was the father of a large family and died at the age of 85, having been a very healthy man exeept for the malignant disease. I have in mind an old friend of mine, who consulted me for 8 or 10 years before the malignaney developed on this base, in which there was no thought of syphilis, either with himself or anywhere in the family. If one can live with syphilis to 60 and 80 years of age, it is a peculiar thing. These are the points of whieh I wished to speak beeause they are at varianee with what has been said.

Dr. A. W. Morton, San Franeiseo: I wish to report one case under my observation during this month. The man is an attorney of prominence, who developed syphilis last year. On the 7th of January the left faeial nerve became paralyzed and there was evidence of gumma in the brain. He had been taking enormous doses of mercury and iodide of potash. Last month he spent most of the time at some southern resort and continued the mercury. On the 7th of this month he called at my office, and on examination I found a complete paralysis of the left facial, so much so that it was with great difficulty that the man could talk. He had not been able to close his left eye since the paralysis had originally occurred. I placed him on large doses of bichloride of mercury intravenously, because I wanted a rapid action. On the third day, after looking up some of the works of Bier, I decided to produce an intense hyperemia in the brain for one hour night and morning. The first time I placed the compresses over the jugulars, bandaged and kept this on for an hour. In the evening he ealled my attention to the fact that he closed his eye. The improvement increased and he could whistle and had perfect control of the left side of the face. I attributed this to the mercury, but the next morning he returned and told me that after he had gone out into the air the night before the paralysis had returned and he wanted me to put the bandage on again. I applied the bandage again and at the end of an hour he had perfect use of the

face, so much so that he used the muscles in every way except that the muscles were slightly atrophied. After making this observation, I had him come to the office in the evening and at the end of the application he had perfect control of his muscles. This went on and on the 16th of this month he had perfect control of his face and returned to me after a week with all the paralysis disappeared. That to me was something that I could hardly attribute to the hyperemia, and still the evidence was so complete that I could not doubt it. A number of physicians watched this case with me and saw the paralysis disappear. I thought that it might be hysteria, but there was no evidence of it. This case brings up the value of Bier's treatment, of which I shall speak later.

Dr. H. G. Thomas, Oakland: If there were 2,000 physicians here, I would ask you what proportion of the medical profession recognizes, or examines, and really finds his syphilitic cases? As Dr. Cooper has said, syphilis is an arch-imitator of all diseases. I think the role of the oculist and aurist, with regard to this disease, is that of the diagnostician. We look at this disease with interest until the lesion in our line, which we are helping, has disappeared. I believe that is the trouble with syphilis all over the world. The lesion is treated and not the disease. What can we say of such a physician who has had charge of a family for years and has not recognized syphilis? As to the treatment, I think that the best treatment is looking after the patient and keeping your finger on the pulse of the treatment. If you give your patient iodide of potash or pills, how long will he keep up the treatment, and do you know whether he is keeping it up or not? Have you control of your patent? Your cases will get better ten times as fast if you look after them carefully.

Dr. Granville McGowan, Los Angeles: It really makes but little difference what form of mercury is used. The essential treatment is to prevent the development of the spirochetae. I think that in the discovery of the spirochetae we have found the cause of syphilis, that it is the micro-organism itself. I also believe that in making the diagnosis of syphilis a great many mistakes will be made based upon the question of the spirochetae. There will be many errors, but this opens a way to better diagnosis of early syphilis. We know that the agent which controls syphilis is mercury, associated with anything that will control the general quality of the blood and increase the number of red blood corpuscles. I deprecate the use of opium with mercury. It is not necessary for physicians to put that extra temptation before these patients. In the use of the salt of mercury, I do not deem it necessary to ever produce salivation, however grave the case may be. Intestinal disturbances or the appearance of globules at the edge of the gums should be the signal for the lessening of the adult dose. There should be perfect cleanliness of the mouth and the use of chloride of potash tooth paste. Whatever the salt used, the essential point should be a dose sufficient to improve the symptoms of the disease.

THE EARLY RECOGNITION AND TREATMENT OF SQUINT.*

By WM. F. BLAKE, M. D., San Francisco.

The subject of squint or cross-eyes is one that should strongly interest the general and family practitioner, and I hope that what little I may have here to offer on this subject may reach the ears of those for whom it is primarily intended.

It is to the family physician that the child is usually taken when the early transitory deviations of the eyes begin to appear. On his judgment the parents rely, and his advice, right or wrong, is in most instances unhesitatingly followed. I am glad to say that, as a body, physicians not specialists in the treatment of the eye have a right appreciation of the importance of the very earliest possible treatment of these cases. This means that at present fewer and fewer children subject to this defect are allowed to drift on until the deviating eye is fixed in its deformity, and blind as a result of disuse.

In this paper I shall confine my remarks on the subject of squint to the convergent type of variation, as this type is more common and perhaps more easily recognized. Though much that follows as to etiology and more particularly as to treatment is equally applicable to all heterophorias.

Squint was originally defined, and unfortunately this definition is still widely accepted, as a deviation of the visual axis of one eye from the correct position of fixation. This definition, true as far as it goes, stops far short of the whole truth. As Worth well says, "One might as well describe Potts' disease as a deviation of the spine from its normal shape." The deviation of the eye is only the external sign of the trouble, a symptom whose importance has been allowed to overshadow the true picture.

True parallelism of the eyes is, if not rare, at least not frequent. Yet only a very small percentage of these imperfectly adjusted eyes retrogress into a condition of fixed deviation. There is in the brain a center whose function is to receive and blend the double picture of external objects that come to us through the two eyes. If through anatomical anomalies of the orbit, or faulty muscular insertion of the extrinsic muscles of the eye, or unequal or faulty innervation of these muscles, the eyes do not naturally assume a correct position for the binocular impression of external objects, then the higher apperceptive center, commonly called a fusion center, in accordance with the law of corresponding retinal points, sends out afferent impulses to the motor nerves of the eye, thus prompting more accurate adjustment of the optic axes, and makes possible the blending in the mind of a clear-cut picture of the biretinal recognition of an external object. Thus the fusion center, through its desire for single binocular vision, demands accurate adjustment of the optic axes. It is the defect or abeyance of this faculty of fusion that allows the original slight imperfections of adjustment to progress into a fixed deviation of the visual axes.

Another condition associated with squint is suppression of vision in the non-fixing or deviating eye and as a corollary of this suppression, progressive central amblyopia. There is usually associated with convergent squint some error of refraction, most frequently hypemetropia and hypemetropic astigmatism.

Congenital amblyopia is admittedly a clinical fact, though it is certainly a much rarer disease than was formerly believed. If congenital blindness be present, it is undoubtedly a factor in the production of squint, since then there are no efferent impulses going from this eye to the brain and no afferent

* To have been read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

impulses returning to keep it in alignment with its fellow. It is thus left to the play of its extrinsic muscles and turns in the direction of the strongest pull. Happily our original inference as to the etiology of squint, that it was due to a congenital amblyopia has been superseded by the scientifically established fact that the amblyopia is one of disuse —an exonopsia that follows progressively and proportionately the mental suppression of the image in the deviating eye and the lapse of months or years over which suppression existed.

There has always been in medicine a warfare between science and empiricism—nowhere more true than in the pathology and treatment of squint. A fundamental mistake has been to look upon a squint as a deformity of oscular muscles, a mechanical displacement, a supposed shortening of one extrinsic muscle, hence how natural the empirical treatment of tenotomy or myotomy as originally done by Dieffenbach, the father of this muscular theory. Since the appearance of Dieffenbach in 1840, before the French Academy of Medicine, there have been many and enthusiastic advocates of his theory and treatment. In spite of the brilliancy of technic of these operators, results have often been disappointing, if not disastrous, such as strabismus of the opposite type, retraction of the caruncle and exophthalmus.

With Donder began a new era—he grounded his plan of treatment on a physiological basis and established the theory of the relationship between convergence and accommodation.

If one looks at a distant object, as a mail box on a corner a square away, the axes of the two eyes are parallel, and if the eyes are emmetropic, rays of light from the distant object come accurately to a point on the retinæ. If the eyes be hypermetropic then they must accommodate, that is, increase their refractive power by contraction of the ciliary muscle. If the point of regard be now shifted from the distant object to the point of a pencil held a few inches in front of the nose, then the eyes must be rotated inward, i. e., converged, and in order that the now divergent rays may be brought to a focus on the retina it is necessary for the ciliary muscle to still further contract to increase the lens' refractive power. Thus we see that the act of convergence and accommodation are physiologically associated.

Donders first recognized this relationship and by its application to the treatment of squint, he began the salvage of this branch of ophthalmology from the grasp of empiricism and put it in the sane and safe custody of science. Donders saw that if there is a relationship between accommodation and convergence whose standard ratio is found in emmetropia, then in hypermetropia with its added burden of ciliary activity and constantly increased nerve impulse, there follows also to the functionally related phenomenon of convergence an increase and an overstimulation to the internal recti muscles. This upsets the relationship of diopters of accommodation to the prism angles of convergence, convergence is over stimulated and one or the other eye, that one in which the overstimulation is greater, places its line of vision to intersect a point nearer to the face than that at which the object really exists.

While the theory of Donders is fascinating and scientifically sound as far as it goes, it stops short of a perfectly satisfactory explanation of the etiology of squint. It is a well recognized fact that only a very small percentage of hypermetropes become squinters; and more, it is not necessarily among the high hypermetropes where the balance between accommodation and convergence is most disproportionate that the most and more pronounced cases of squint are found.

It remained for Javal and Paunaird of France, Worth, Maddox, Priestly Smith in England, and in this country Savage, Reber Vierhooff, Duane and others to recognize the influence of the higher brain centers and to show that the power of fusion is the governing factor in stereoscopic vision.

Since the field of fixation of each eye overlaps to the extent of 60° the nasal field of its fellow, it follows that the image of the object looked at is formed on each fovea. Yet though there are two images, we see not two objects, but one. In other words, we have binocular single vision. This phenomenon of combining the two retinal images into one is executed in the mind by a higher center called the fusion center. Vision with two eyes is more distinct and the object more solid looking than when seen with one, in the former instance we get clear, in the latter imperfect ideas of distance, depth and relief.

Over this mental process by which the blending of duplicate images is accomplished presides the fusion faculty. The absence or non-development of this center appears to be the prime factor in the production of squint. Interesting as is the discussion of the causes and production of squint, it is to a discussion of its recognition and treatment that the mind insistently turns.

While the family practitioner is not in a position to undertake the treatment of these cases, he can, as general adviser to the family, urge upon the parents the proper course to pursue. unfortunately for the child, parents sometimes postpone treatment on the assurance that the child will outgrow the trouble. It is true that an occasional crossed eye becomes straight. This can probably be accounted for by the fact that coincident with the growth of the child up to a time of puberty the outlines of the face change markedly and the axes of the orbit swing a little temporal-ward. But for the fortunate one eye thus happily made straight there are an host that steadily progress from bad to worse, later to become a living reproach to procrastinating parents, and to the medical profession an embarrassing unworthy example of its unwisdom or indifference. It is a matter of experience in the treatment of these cases of convergent squint that if seen early from 40 per cent to 70 per cent can be cured without any treatment other than the constant wearing of perfectly fitted glasses. No child that squints is too young to wear glasses and it is imperative that the refractive error be early corrected.

I have grouped the steps in the treatment of these

cases into six divisions, placing them in what I consider the order of importance.

1st. Accurate measurement of refraction under atropine. This, of course, presupposes expertness in the use of the retinoscope, this being the only means at our command for use in young children.

2d. Constant wearing of the full refractive correction.

3d. Occlusion of the good or fixing eye. This may be accomplished by the use of atropine, or, a method which I prefer, by taking a pair of light automobile goggles and putting a ground or black glass in front of the good eye with the proper correcting lens mounted in front of the squinting eye. The child is prevented from looking over or to the side of the occluded glass by coating the wire sieve framework with shellac. A few pinholes must be punched through for ventilation purposes. Vision in the squinting eye will improve much more rapidly if we make no compromises with the child or with indulgent parents, but firmly insist that these glasses be worn constantly.

4th. The use of the amblyoscope of Claud Worth. I use the modification of the original make suggested by Black of Milwaukee. I would here urge the unwisdom of allowing parents to undertake these exercises at home, for invariably they fail to execute them properly. The results are nil, and by the fruits of their own efforts they are likely to estimate the good that follows as a reward of effort in more skillful hands. When by the use of the amblyoscope I have first stimulated simultaneous muscular perception, from this point progressed to the fusion of the two halves of a picture into a composite one, and so elicited a feeble sense of perspective, and if in addition to this I can by use of the cover test or with red or green glass in front of the eyes elicit diplopia, I feel that the case is well in hand, and with the co-operation of the child's parents I can almost certainly promise an ultimate cure.

5th. In the further treatment of these cases, I urge that the child be taught simple perspective drawing and that the child practice mental drawing of geometrical figures. This is an exercise that is frequently done in beginning art classes. Take some solid geometrical figure, as a cube, pyramid, rectangle, etc., put the figure on a chair or table some distance from the child, have him take a pencil in hand and trace out in space in front of him the directions of the lines and planes that make up the figure, doing this first with the right and then with the left hand. I have never seen this particular exercise mentioned in any text book or monograph on the treatment of squint, but I presume, though unmentioned, it is commonly used.

6th. The sixth and last step in the treatment of squint is the operative interference. This has purposely been placed last because a majority of cases can be cured without the aid of surgery, and it is sensible that this step be postponed until all other means fail. I do not in the least underrate the merit of muscular correction in the properly selected cases. To be a bit paradoxical, these selected cases are those never selected for any kind of treatment, they are the result of someone's indifference on blunder. The eye is already blind from disuse, hence the prescribing of glasses to correct the refractive error and the effort to stimulate muscular perception are alike useless. In these cases surgery is of avail, yet even here it has its limitations. The most fortunate result is only a cosmetic one and even if happily the eye is put straight, and yet more happily, if, in the absence of vision, it remains so, after all the eye is as blind as ever and as useless as before the deformity was corrected. Abnormalities in the orbits and in muscular origin and insertion most certainly exist, and in these cases it will ultimately be necessary to operate to obtain desired results. But even in these cases means must be first taken to conserve good vision in the squinting eye and fusion must be awakened and stimulated to the maximum. When it is proved that the desire for fusion and binocular vision can not overcome the anatomical defect then we may wisely consider the advisability of operative interference, for with the visual function and fusion in the amblyoscope well established, we can rest in the assurance that nature will come to our aid. If now we more or less satisfactorily correct the deviation, nature will begin where the surgeon leaves off, and by its insistence on the stimulation of corresponding retinal points bring the eyes into perfect parallelism.

SOME THINGS TO REMEMBER.

The State Journal and the State Society have now offices in the Butler Building, Geary and Stockton Streets, San Francisco.

The State Medical Society meets in San Jose, April 20, 21 and 22, 1909.

The A. M. A. meets in Atlantic City, June 8-11, 1909.

SAN JOAQUIN COUNTY ON NOSTRUMS.

Stockton, Cal., September, 1908

To the Physicians and Surgeons of San Joaquin County:

Dear Doctors—There has been a special committee appointed by the San Joaquin County Medical Society to look into the abuses arsing out of the use of proprietary medicines. These abuses are many and affect not only the physician, but the druggist and people at large as well. They affect the doctor in many ways.

First. He becomes lazy as to prescribing the medicines according to the national formulary.

Second. He compels the druggist to load his shelves with a lot of medicines easily compounded by any intelligent pharmacist.

Third. The druggist having these articles on his shelves, it is easy, in many instances, to prescribe over the counter to many people who would otherwise consult the doctor.

Fourth. An intelligent person who reads the prescriptions the doctor writes before presenting them to the druggist for filling, in many instances, become familiar with the name of this special preparation prescribed, and instead of handing in his prescription, will ask for this preparation of the druggist, thereby getting the original package containing all the literature, dosage and other information connected with the medicine.

Fifth. The doctor, in his effort to dispose of these preparations, becomes an active selling agent for the proprietary medicine concern, and while it reduces his own profits in the business, aids these people to

make tremendous fortunes and encourages them to further foist upon the public more and more nostrums.

The duties of this committee are to recommend to the society and physicians at large, the best method of prohibiting the use of these preparations. The committee also desires an opinion from every physician in San Joaquin County and tothis end has prepared a series of questions, which should be answered as promptly as possible.

It is not possible nor practical for each of us to analyze each preparation pharmaceutically; consequently we have in the past been compelled to accept the manufacturers' word for their formulas, but such is no longer the case since the Council of Pharmacy of the A. M. A. has carefully and scientifically done that work for us.

We have taken up this matter with a number of first-class pharmacists. They are only too anxious to assist us (and themselves) by not having to carry the tremendous number of proprietary drugs which we order.

The national formulary contains everything in the way of medicines for internal and external use that we may require.

It is our object first to agree amongst ourselves to use nothing that is not sanctioned by the national formulary and the new preparations sanctioned by the committee on pharmacy of the A. M. A. If we do not use these proprietary medicines, the druggist will get rid of what he has, and will never buy any more. Should he do so, we can largely curtail his business by sending our prescriptions to the druggist who does a strictly prescription business, and if there are no concerns carrying proprietary medicines, the public will be largely protected by their inability to purchase them.

We are inclosing you a reprint of "The American Medical Journal" showing how ridiculously we have been imposed upon by the proprietary medicine fakers. We ask you to carefully read this reprint from end to end, and if you can not agree with us after reading this booklet, we certainly do not know any argument that will convince you, but we believe you are with us.

The page containing the questions we ask you to fill out and mail to us at your earliest convenience. We have other work to follow, and we desire to see the medical profession in San Joaquin County on the top notch of strictly ethical business in the near future.

Signed,

H. N. CROSS, M. D.,
J. P. HULL, M. D.,
A. M. TOWER, M. D.,
L. WELTI, M. D.,
B. F. WALKER, M. D., Secretary.

1. Do not the various text-books on therapeutics contain all the drugs and chemicals known to medical science?

2. Are you familiar with the principal ones of merit, and do you know their therapeutic action and doses?

3. Can you with your present knowledge of pharmacy write a prescription containing anything you desire?

4. If so, why don't you?

5. When you prescribe proprietary preparations do you remember all the ingredients they contain?

6. Does the majority of the pharmaceutical houses give you the quantity of each ingredient?

7. What can you tell your patient if he asks you if he may double the dose?

8. Is it not the physician's fault that proprietary remedies are kept in stock at all drug stores?

9. Is it not a fact that the druggist would be glad if the physicians did not use proprietary remedies?

10. Is it not a fact that druggists counter prescribe?

11. Is it not a fact that in most of the counter prescribing proprietary articles are used?

12. Would not the counter prescribing be less if there were no proprietary articles on the druggist's shelves to be dumped into bottles and labeled?

13. Does not a physician's knowledge of therapy become less after using proprietary articles for ten or twenty years?

14. Do you know your pharmacist makes less profit when you prescribe proprietary articles?

15. Do you know it costs your patient more money?

16. Is it not a fact most of the proprietary articles are made in the East?

17. Granting the above facts that the druggist makes less and the patient pays more, is it not a fact the patient's money goes to Eastern cities?

18. Do you honestly believe that you cure your patient more rapidly by using proprietary articles than Dr. B, who uses straight drugs?

19. Read the following facts before answering question 20: Gude's Pepto Mangan costs $10.00 per doz. bottles (14-oz. bottles). Traces of manganese are found in the red blood corpuscles, but same is found to be unaltered in all forms of chorosis or anaemia. (Steven's Therapeutics, page 242.) Numerous tests have been made by scientific observers in anaemia with Gude's Pepto Mangan and Blaud's pill with the following results: Blaud's pill did in forty days what it took Gude's Pepto Mangan seventy-five and eighty days to do. What is true of this preparation is also true of ninety-nine out of every hundred proprietary medicines.

20. Why do you use them?

BERI-BERI.

(Concluded from Page 358.)

The autopsy demonstrates clearly that death was due to an affection of the nervous system, especially of the peripheral nerves, which are the seat of true polyneuritis. This is especially pronounced in the spinal nerves; of the cranial nerves only the pneumogastric is involved, in certain cases, equally affected. In fact even the spinal cord is not exempt from the process of degeneration.

Chickens fed on rice not, or badly thrashed, never contract the polyneuritis in question; chickens attacked by the disease recover when the ordinary table rice is replaced by unshelled or badly thrashed rice or by husked rice which is added to their ordinary fare.

Eykmann is led to believe that the poison which produces the polyneuritis is not to be found in the fecula of rice. He is of the opinion that the poison is produced in the digestive tract through the influence exercised by the intestinal organisms upon this food. The pellicle or bran of the rice would thus have the remarkable property of rendering the poison inoffensive.

An investigation made in various prisons in Java seems to establish the theory of Eykmann. Thus the morbidity was 284 per 10,000 in the prisons where white rice was used, and was only 1 per 10,000 in the prisons where the base of alimentation was red rice.

The cause is insufficient nitrogen. Rice is the poorest of all the cereals in nitrogenous principles and according to Boussingault it does not contain any more nitrogen than hay; 100 grams of rice contain about 1.40 gms. of nitrogen. A ration of rice of 900 grams represents, therefore, 12.60 grams of nitrogen, although the ration should contain, according to physiologists, 20 gms. The small quantity of salted fish allotted to each individual is not sufficient to bring the nitrogen up to the physiological figure. There is, therefore, insufficient nitrogen in the dietary of the natives, which it is necessary to remedy by giving a certain quantity of meat.

The cause is insufficient fat. The working ration, according to physiologists, should contain about 60 gms. of fat; but on determining the quantity of fat contained in the alimentary ration of a prisoner at Poulo-Condor, it was found to be less than 20 gms. per day, a quantity notoriously insufficient, not only for work but also to sustain life. This lack of fatty materials in the dietary of the natives is, according to Bremaud, the true cause of beri-beri. Laurent has recently cited two epidemics of beri-beri; one at Chantaboun, the other at Poulo-Condor, where the addition of fatty materials to the dietary seemed to stop the disease.

The agents of the propagation of beri-beri are cockroaches. A Dutch physician has advanced the idea that cockroaches or weavils might be the agents of propagation of the beri-beri virus. The following would be, according to this author, the pathological physiology of beri-beri and the mechanism of contagion: The disease would be due to a specific microbe, which after penetrating the intestine and by its multiplication in the intestinal canal would produce a toxin the absorption of which gives rise to the beri-beric syndrome. The cockroaches serve to carry the specific organism from the feces of the patients to food, particularly rice, destined for healthy persons.

Conclusions to be Drawn.—Beri-beri seems to arise among human beings whose alimentation is defective. We have had occasion to assist during the epidemic of beri-beri in the jail of Poulo-Condor in 1880 and 1881. The epidemic ceased by the administration to the Annamite prisoners of a small portion of fresh fish every day. Beri-beri is thus like scorbutus, but it should be acknowledged that we have not penetrated the mystery of the genesis of either one.

Contagion.—Beri-beri is not a contagious disease. The epidemic arises always in a group of people who live under defective alimentary conditions and is not carried from one group to another living under good hygienic conditions, even though there be frequent communication between the two groups as is inevitable on shipboard. The epidemics of groups and of families should not be considered as examples of contagion, for if we determine the source we find that it is always the same, defective alimentation. In the case of the "Parmentier" which we have cited above, we have omitted mention of the epidemic of cholera which appeared on board after putting in to Mauritius. Cholera attacked the European crew while beri-beri attacked only the coolies.

Predisposing Causes.—(a) Age. Beri-beri, which is rare in infancy, more frequent in old age, reaches its maximum of intensity at the prime of life.

(b) Sex. Beri-beri is rare among women (1 to 15 according to the Japanese statistics) except during pregnancy and after delivery. The wet form is more frequent in pregnant women than is the paralytic form.

(c) Race. The yellow and black races present a great predisposition for beri-beri. The white race is usually not attacked, but the immunity of the whites depends on their alimentary regime rather than on a true racial immunity, for in Brazil there have been observed a number of cases of beri-beri among whites and half-castes.

(d) Season. In Japan, according to Simonds, beri-beri occurs more often in winter. At Poulo-Condor, according to Gayet, the disease appeared always during the northeast monsoon, which is cold and wet (November, December, January). He has also observed it during the southeast monsoon among men working in the forests, which are cold and wet.

(e) Diseases. All the cachectic maladies predispose to beri-beri, especially malaria, dysentery, diarrhea and Bright's disease. Reaucar has remarked that the Annamites who have ulcers on their lower limbs are especially apt to have the disease.

Clinical Study.—Beri-beri presents three clinical forms: a wet form, beri-beri hydrops, characterized by edema; a dry form, paralytic or atrophic beriberi; and a mixed form. But whatever may be the form of the disease, it is almost always preceded by certain morbid phenomena, as weakness of the lower limbs, dyspnea, a sensation of constriction at the base of the thorax, and unfitness for work. Rarely the infection begins abruptly with edema or paralysis.

Wet Beri-beri.—The edema begins always in the lower limbs and it is at the level of the internal surface of the tibia that it is most easily perceptible. It may next manifest itself on the face or the sternum and finally invade all the cellular tissue more or less rapidly. On this account arises the necessity of considering it under two heads, the rapid form and the slow form.

Rapid Form. In the beginning the patient is not able to assume the erect position, he falls when he attempts to rise alone. He complains of variable pains in the lower limbs. Sometimes these are like formication, sometimes pricking or stabbing. The edema makes rapid progress and the patient is soon infiltrated in all parts as in acute nephritis, but here the edema is more severe and the scrotum is not always attacked. Further, the urine does not contain albumen and shows a high proportion of phosphates.

Three other important symptoms accompany this general dropsy. They are constriction of the thorax, dypsnea and vomiting. The patient complains of a very painful sensation of constriction at the level of the epigastrium and the base of the thorax. This sensation, which is called the "beriberi corset," is sometimes accompanied by a true angina. The patient may complain of an acute pain beneath the sternum. This is the sign of a serous extravasation into the pericardium. The dyspnea is sometimes so intense that the patient cannot assume the dorsal decubitus. Finally, vomiting supervenes and the gastric intolerance is such that the ingestion of more than a small quantity of liquid is impossible. The pulse is rapid and filiform, the heart-beats are softened, the rhythm fetal. There is sometimes reduplication of the second sound (De Lacerda). The interference of respiration may become so great that the patient literally dies of asphyxiation.

Sometimes the edema is not pronounced and nothing prevents the rapid progress of the disease, the patient dying rapidly of a syncope. We have observed a fulminant case of this sort in Poulo-Condor. It occurred in an Annamite who came complaining of weakness of the lower limbs. He

presented shin edema and as we were then in the midst of an epidemic of beri-beri I directed him to the hospital some twenty meters distant. He fell dead while walking there.

Slow Form. Here the serous infiltration does not progress so rapidly as we have observed in the first case. It progressively invades the tissues one by one. The face is puffed, the eyelids are swollen by edema, and Francois speaks of a patient who, in order to see, was obliged to open the eyelids with his fingers. The epigastric pain is less severe and the thoracic constriction less pronounced. When the termination is going to be fatal, the paralysis spreads, invading sometimes the respiratory muscles. Laurent has seen in four fatal cases phrenic paralysis manifest itself in the diaphragm by inversion of the respiratory rhythm.

In the case of termination in recovery, the anasarca disappears little by little, the tissues becoming normal. The patient may raise himself, but there remains for some time great weakness of the lower limbs. Before, as after the edematous infiltration, the limbs are very weak, to which the name of "glass legs" has been given. This feebleness of the limbs forces the beri-beri patient to walk with the legs spread apart and to use a cane which he carries before him. I call this beri-beri gait the tripod gait, because the limbs of the patient and the staff form a true tripod, which acts as a base to sustain the body. To advance, the patient moves successively each of the three branches.

Gayet has pointed out the existence of two painful points on pressure of the spinal apophyses; a first point at the level of the cervical enlargement of the spinal cord, that is to say, at the level of the second and third dorsal vertebrae; a second point more constant corresponds to the lumbar enlargement, that is, between the ninth and eleventh dorsal vertebrae.

Dry or Paralytic Beri-beri.—According to Simonds, the first symptom which appears after the troubles of the prodromal period is, in general, anesthesia of the skin in certain regions of the body, as the anterior tibial region, the dorsal surface of the foot, the ends of the fingers and toes and the circumference of the mouth. The patient complains at the same time of subjective sensations, formication, prickings and burnings. The gustatory mucous membrane is sometimes the seat of bizarre sensations. Costa Alvarenga has reported that many patients think they feel hairs and living creatures when they pass the point of the tongue over the palate (Gayet). The paralysis appears next in variable degrees in certain groups of muscles, usually in those which are situated beneath the anesthetic skin. The paralytic form which one sees commonly is pseudo-tabetic, and this has been called beri beric pseudo tabes. According to Alfredo Britto, the paralysis is preceded here as in true tabes by the signs which Fournier has noted in the preataxic period of locomotor ataxia, Westphal's sign, Romberg's sign, etc. In the anesthetic period the patients drag the limbs in walking as if they were in water up to their knees, but if the paralysis has attacked the peronei and anterior tibials, there is steppage gait as in true tabes.

The paralyzed muscles are always painful on pressure (Myodynia). Sometimes there are true lightning pains (Bourat). Sometimes the paralysis attacks the entire lower limbs, but it almost always respects the vesical and anal sphincters. We have, however, observed paralysis of both sphincters in a fatal case of beri-beri. Erection is difficult and slow at the beginning of the disease, later it disappears completely.

Sometimes the polyneuritis attacks the upper limbs. It manifests itself first by disturbances of the cutaneous sensibility, later it attacks the muscles. It attacks by preference the extensor muscles and the inter-ossei muscles of the hand, giving predominance to the flexors, which sometimes become permanently contracted, producing the main en griffe or griffe beri-berique. These paralyses of the upper limbs are frequently accompanied by trophic disturbances. These are muscular atrophy of the thenar and hypo-thenar eminences, drying of the skin, etc.

In certain rare cases, one observes anesthetic placques on the face, the back and the abdomen.

In paralytic beri-beri, the constriction pains of the thorax are less pronounced than in hydropic beri-beri. According to Lacerda, pressure on the phrenic in the cervical region produces respiratory disturbances.

Several Brazilian physicians have observed a diminution in visual and auditory acuity, probably on account of neuritis of the sensory nerves. The temperature of the body almost always remains normal, hyperthermia being very rarely observed. Convulsions of the muscles of the face are sometimes seen. Trembling of the limbs is exceptional.

When the beri-beri paralysis has existed a certain time, the electrical excitability of the muscles is weakened (Simonds).

The continuous current provokes only slow or sluggish contractions (Baelz). The induced current is without action unless strong. Finally, in the last stages the atrophied muscles do not react at all to electric excitation.

We have observed curious troubles of the memory in a European traveling in Colombia where he had contracted beri-beri in the following circumstances: He directed the exploitation of a gold mine in the woods. He was obliged to subsist like the natives almost exclusively on rice. An epidemic of beri-beri appeared among the personnel of the mine and attacked him at the same time. Neither malaria nor alcohol could be incriminated in this case. In addition to the signs of polyneuritis of the four limbs, the patient presented very clear symptoms of amnesia of fixation. He could not recall what had been said to him a few moments before. The memory of recollection was less affected. He did not have a blank amnesia, properly speaking, but a sort of dim amnesia, with which he was afflicted during his entire stay in Colombia. We treated this patient by re-education, tonics and hydrotherapy. In about two months, the cure was almost complete. Beri-beri amnesia would thus seem to be less grave than that following insolation.

Mixed Beri-beri.—This form, as its name indicates, includes all the symptoms found in the wet and the paralytic forms. The disease begins with edema and paralysis. In mixed beri-beri, pressure produces pain in the paralyzed muscles as in the atrophic form and the edema presents the variations which one observes in the wet form. The thoracic constrictions, the retro-sternal pains and the angina are intense in proportion to the severity of the attack.

Complications.—The complications which may be grafted upon beri-beri are those which are usually observed in all tropical diseases, that is, malaria, diarrhea and dysentery.

Duration and Termination.—Beri-beri is a disease of essentially variable duration. Rapidly fatal in the fulminant forms, it lingers through many months in the ordinary cases. It frequently leaves incurable paralysis in its wake and in almost all the jail hospitals there is a room where one may see several cripples, the debris of an epidemic of beri-beri.

Death from asphyxia may be seen during convalescence. The patient awakes from the midst of a siesta or in the middle of the night with a sudden dyspnea and intense constriction of the chest, the heart-beats are tumultuous and the patient emits a few groans and dies.

The wet form is more grave than the dry form, but the latter often leaves behind it incurable paralysis.

Relapses and Reappearances.—The relapses and reappearances are excessively frequent in beri-beri and a first attack of the disease is a predisposing cause for a second attack. One should therefore pay particular attention to the alimentation of the patient during convalescence and cure, if one does not wish to invite a relapse or a recrudescence.

Emigration is a good means of avoiding new attacks of the disease. In Japan one sees patients cured by leaving the endemic foci, but they relapse on returning.

Diagnosis.—Beri-beri should first be distinguished from other diseases by alimentation. Scorbutus has a symptomotology so entirely special that it is difficult to confound it with beri-beri. On certain ships one sees scorbutus and beri-beri developing side by side.

Lathyrism is, as we know, chronic poisoning caused by the ingestion of several species of vetch, vulgarly called the lathyrus (Spanish lentils, chickling-vetch, chick-pea, spurge-laurel, etc). It is characterized by the existence of a spasmodic paralysis and the absence of edema.

As in all the spasmodic contractions, one observes in lathyrism exaggeration of the patellar reflexes and epileptoid tremors. There is no muscular atrophy. Finally, the toes are flexed and the point of the foot is somewhat rotated upon its internal border. In lathyrism the patient walks with the leg stiff in extension and the toes flexed so that they strike against rough places in the ground.

Pellagra is a disease due to the ingestion of damaged maize, which contains a toxic alkaloid, pellagrazine. Pellagra is characterized by the existence of erysipelatous placques on the surface of the skin, covered with furfuraceous scales and studded with tubercles. Paralysis of the lower limbs and pellagric insanity are not observed long after the appearance of the erysipelatous placques.

Chronic ergotism with contractures of the flexors of the limbs and dry gangrene is easily differentiated from the placid paralysis of beri-beri.

Chronic beri-beri has been often confounded with alcoholic polyneuritis, and many of the cases of paralysis supposedly due to beri-beri observed in Europeans are simply peripheral neuritis of alcoholic origin. Therefore one should always first think of chronic alcoholism in examining a case of peripheral neuritis observed in a white in the colonies. The interrogation of the patient permits one to assure himself that the case does not present the respiratory disturbances or the constriction of the thorax as is observed in the acute phase of kakke. In case one cannot determine habitual intemperance in a paralyzed European, one should direct his investigations to chronic malaria, which, as we know, is sometimes accompanied with peripheral neuritis. Finally, the diagnosis of beri-beri in the European may be assisted if it is known that he has been placed under the same conditions of alimentation as the natives.

Feris committed the error, excusable for the times, of confusing beri-beri with myxedema. This latter affection is so well known nowadays that this confusion is not possible. The hydropic form of beri-beri resembles the anasarca of acute nephritis, but beri-beri patients do not present albumin in the urine and the scrotum is not generally the seat of a serous infiltration.

Prognosis.—The appearance of certain symptoms in the patients forms an index of the gravity of the case. Dyspnea, accompanied by pericardial angina and rapid pulse, indicates a neuritis of the pneumogastric and should make one fear a fatal issue. Paralysis of the diaphragm indicates that the phrenic nerve is attacked. Hypothermia is usual in beri-berics, but it does not fall below 36.5°C. A lower descent is a grave omen.

Francois has noted as a symptom of always fatal prognosis, the sensation of internal fire which the patient experiences. This is a forerunner of approaching death. The patellar reflexes are suppressed in acute beri-beri. Their reappearance announces a happy termination.

Mortality.—According to Le Roy and Mericourt, in Europeans, out of 215 patients 56 died, i. e., about one quarter. In the colored races, 2657 patients gave 885 deaths, i. e., about one-third. Beri-beri is therefore generally more grave in the colored races than in the white. Certain epidemics present a high mortality, 70 per cent in the epidemic of Bahia. Silva Lima, who made numerous statistics in the various forms of beri-beri, attributes a mortality of 78 per cent to the edematous form, 50 per cent to the paralytic form, 82 per cent to the mixed form. The minimum mortality which has been observed in certain epidemics of beri-beri does not fall below 15 per cent.

Prophylaxis.—The pathogeny of the affection indicates the prophylaxis of beri-beri. We have seen that it is only necessary to place natives attacked by an epidemic of beri-beri on a European diet to quickly arrest the disease. Beri-beri being thus attributable to an insufficiency or absence of certain principles in the ration, the first duty of the physician is to supply what is missing. The prophylaxis of beri-beri interests particularly physicians in charge of the various Indian, Annamite and Japanese emigrations, physicians serving with Hindustanee, Annamite, Tonkin, Sengalese, Sepoy and Malagash troops, and doctors in service in native jails and prisons.

We have placed first physicians in charge of emigrants because that type of native passengers depend upon the preventive measures which are taken by the captain of the ship from the viewpoint of alimentation (beri-beri) and drinking water (dysentery). Beri-beri should be expected if the food of the natives is composed exclusively of rice and salted fish. The best means of preventing the appearance of beri-beri is to add pork fat to the ration; to alternate the salted fish with salt pork and to issue, if possible, fresh pork or beef twice weekly. It is needless to add that ample provisions of onions, tamarinds, spice, peppers, salt and garlic should be provided.

Treatment.—(a) Dietetic. The first thing to be done is to place the patients on European fare. Maheo has remarked at the hospital of Choquan that the patients fed on the European ration recover much more rapidly than those remaining on the native food (Corre).

(b) Climato-therapy. The patient should be sent to the uplands, thus providing in a measure the advantages of a temperate climate. This measure is not always realizable. In this case the evacuation of the premises occupied by the beri-berics is sometimes sufficient to arrest the epidemic. On board ships the patients should be kept on deck as long as possible to avoid the disadvantages of the confined air below.

(c) Therapeutic. In the hydropic form diuretics should be given, nitrate of potassium, tincture of squills, or digitalis. The Brazilians use the Cainca root, which is prescribed in two forms, the decoction, 8 gms. in 300 cc. of water, or in powder gmm, 1.0 to 1.5 thrice daily.

Some physicians associate purgatives and diurctics, Walther recommending the following:

R

Jalap or scammonium
Powdered Squills
Powdered Digitalis

aa gmm. 5.0

Make 100 pills.

Sig: Take one pill every two hours until pronounced effects.

Simmons has used with great success, jaborandi and pilocarpine. He reinforces with advantage this last medication with vapor baths given with the patient in his bed. He treats a failing pulse with caffeine.

Edema of the glottis necessitates tracheotomy.

In the paralytic form of beri-beri, the girdle pains may be relieved with aconite, belladonna, bromide of potassium or ergot to allay the spinal hyperemia. Friction and electricity may be used for the paralyses. One should use great care in the employment of strychnine in the treatment of beri-beri. The general tone should be raised with cinchona, kola, iron and arsenical preparations (Fowler's solution and Boudin's fluid). The latter are, moreover, of advantage in combating chronic malaria, often associated with beri-beri.

Counter irritation along the spinal column (actual cautery, blistering agents and tincture of iodine) have been employed by some physicians. The blisters are inconvenient in predisposing to bed sores. Iodine of potash is indicated in the chronic forms of the disease.

(d) Lumbar Puncture. We think that lumbar puncture or lumbo-sacral puncture would be of great service in the treatment of beri-beri. There are, in fact, distinct indications for active surgical intervention, the constant presence of a large quantity of serum in the spinal canal, constrictive pains of the thorax, dyspnea with angina, filiform pulse, etc. We advise the use of this operation, which is entirely harmless and is coming into general use.

SAN FRANCISCO COUNTY.

Paper by Dr. W. C. Voorsanger, "Aneurysm of the Left Ventricle."

Dr. D'Arcy Power, discussing: Undoubtedly cases of aneurysm of the heart are extremely rare, and I doubt whether it is possible to make a diagnosis except by most careful auscultation. Even with the radiograph I think that we shall not be able to do much. The same thing is true of aneurysms of the first part of the aorta. I have examined cases which have turned out to be aneurysm of the first part of the aorta in which there were neither physical signs nor symptoms. So far as aneurysm of the heart itself is concerned I think we shall always be in the same position, i. e., that the majority of cases will be diagnosed post mortem.

Dr. Cooper, discussing: Of late considerable advance has been made in chest radiography. We can now at a distance of six feet obtain a chest radiogram during suspended respiration, even in dyspnaic people. Such a picture is practically an othho-radiogram. The value of such work in the diagnosis of aneurysm of the heart depends upon whether the aneurysm makes a projection of the heart surface so as to throw an abnormal shadow outline either in the sagittal or coronal plane. If so, then radiography will probably be of much assistance.

Paper by C. G. Levision, "Intestinal Obstruction."

Dr. Barbat, discussing: The only thing that I can add in regard to these cases of obstruction which are due to hernia is that resection of the bowel should certainly be practiced if the patient has not been too thoroughly poisoned by waiting. I prefer making the resection with an end to end anastomosis, the Murphy button serving good purpose. The cases which the doctor did not speak of in his paper are the cases of adynamic ileus. Operation is practically of no avail. The disease has started outside of the intestine or it has arrived at the outside some time before being seen by a medical man or a surgeon, and these cases are particularly hopeless. In cases of obstruction if seen early enough, I advise radical operation and not enterostomy. If the patient is poisoned and is in a serious septic condition, then enterostomy followed by radical operation is the correct surgery.

Dr. Schmoll, discussing: One cannot help being impressed by this appeal to the physician to refer cases for operation early. So far as the physician is concerned, only cases of ileus which occur in the slowly obstructing process can be considered as cases of strangulating ileus are referred to the surgeon right in the beginning. If we understand the paper correctly, Dr. Levison appeals to the physician to refer cases of slowly occurring obstruction at the stage when radical operation is possible. Under what condition can the physician diagnose these cases? The first symptom in such cases is constipation and I think it is a general mistake for the practitioner not to pay sufficient attention to the symptom complex of constipation. I confess that many errors of diagnosis I have committed have been due to the fact that I did not examine the patients with constipation sufficiently. Every case of constipation has to be gone into very thoroughly and I think every case in which constipation occurs after the age of 40 without any previous history of constipation is highly suspicious of beginning obstruction of the intestine. Very frequently I have seen in beginning carcinoma, periods of constipation alternated with periods of diarrhea, and in such cases one finds traces of blood or some pus in the diarrhetic stool; another point to which not sufficient attention is placed is the visible peristalsis. This occurs in almost every case if the patient is observed sufficiently. I remember a case which I have seen lately in which obstruction of the pylorus existed ten years. The diagnosis has not been made. I had to observe the case about a week until I saw visible peristalsis. Examination has to be extended for fifteen or twenty minutes and very frequently the visible peristalsis can be caused by tapping the suspicious place with a wet towel.

Dr. D'Arcy Power, discussing: The cases which puzzle the physician are those in which these typical symptoms are not met. Take, for example, the question of constipation occurring in patients after 40 years of age. Most females after this age are constipated, and yet it is the very age at which you get intestinal carcinoma. The old idea is wrong that carcinoma is associated with pain, cachexia and obstruction; in fact, so far as intestinal carcinoma is concerned, the great majority of cases are painless and cachexia is rarely present. I have in mind a case in which Dr. Terry and I were consultants. The patient had never been constipated or in any way sick or abnormal, but one day the normal defecation failed. There was no visible peristalsis, pain or distension, nor any marked toxemia or discomfort on the part of the patient. Purgatives and enemata gave no relief. On the fifth day when the abdomen was opened, we found complete obstruction of the transverse colon; it was absolutely blocked by a ring of carcinomatous tissue, yet there was nothing in the previous history or final development of the case which could have called attention to this condition. Thus there must always be a large number of these cases that never can be diagnosed until they are on the table, and then it is often too late.

Dr. Philip King Brown, discussing: One interesting thing in connection with this question of bowel obstruction is the remarkable contrasts that one sees in the cause of the obstruction. On the one hand, lymphosarcoma may almost fill the much-distended abdominal cavity, leaving scarcely a foot of the bowel uninvolved, and there will be no symptom of obstruction, while on the other hand a few strands of adhesions between the gall bladder and pylorus or duodenum, or between the bowel and the scar of a

hysterectomy, or in connection with a hernia, or following a diverticulitis, and one may find the most violent pain, and even a fatal obstruction. To the medical man, adhesions are vastly more commonly considered as a cause of complete or partial obstruction than anything else. Another point of extreme interest in this connection is the fact that these adhesions may exist many, many years without causing a single symptom, only to thrust themselves conspicuously into the foreground very suddenly, bringing about within a few hours conditions which threaten death. I regret to say that nearly every case that I have seen of acute obstruction due to adhesions has been operated on too late to give the patient the maximum chance of recovery. This has not always been any one's fault, for it is difficult sometimes to persuade even physicians of the extreme importance of early operation.

Dr. C. M. Cooper, discussing: In considering the diagnosis of intestinal obstruction we must bear in mind:

1. That diseases of the lung and pleura can by the irritation of the intercostal nerves, or by stimulation of the dorsal spinal segments, produce a condition strongly imitating an acute obstruction. The key to the situation lies in the disturbed respiratory pulse rhythm.

2. That in uremia the poisons produced may apparently paralyze the gut muscles, and hence the urine must always be investigated.

3. That the crises of locomotor ataxia may affect the intestine as well or independently of the stomach and so cause anomalous pictures.

4. That in lead poisoning such marked constipation may be present as to lead one astray if one does not systematically examine the gums for the blue line.

5. That auscultation of the abdomen is of considerable service, and we may conclude that if no murmur be heard for five minutes, obstruction is probably present.

I am glad Dr. Levison has called attention to the importance of thorough investigation of middle-aged people who come to us complaining of recently developed constipation and gas pains. In that investigation the sigmoidoscope is very serviceable, and if one will give the patient some charcoal about twenty-four hours previously to the sigmoidoscopic examination, oftentimes useful information relative to the passage of the food through the intestine to the rectum can be simultaneously obtained, and one can definitely determine that there is no obstruction higher up. The recent work of Hummel on the value of the X-Ray in the early diagnosis of these cases is so convincing as to speak for itself.

Dr. F. B. Carpenter, discussing: In the matter of operation, whether it should be radical, or whether one should content himself with enterostomy, depends greatly upon personal equation. It is evident to all of us that one man can do an operation very quickly, whereas another man fully realizes that he can not do the same operation in the same length of time; that man should be content with a temporary operation and subsequently do the secondary, whereas another man might do the complete operation at once. Another point of importance is that of stimulation for patients. Those of us who have watched the effects of interne work in the hospitals, and have left patients in charge of internes, have found invariably that the interne loaded the patients up with about everything he has learned in his college, and the consequence is that the patient who is prostrated by illness and appears very nearly dead is hindered in his progress by a load of strychnine or digitalis or any other stimulant. These things are not always adjusted by the chief, but the chief should keep them in mind.

Dr. Levison, closing: There have been several points discussed which have been incorporated in my paper. The first point mentioned was in reference to cachexia. All surgeons of experience have had patients come to them with inoperable carcinoma of the breast, uterus or intestines where cachexia was quite absent. This, consequently, should not be taken too seriously. Concerning visible peristalsis, I have on numerous occasions failed to see the peristaltic movements in bowel obstruction, because of the thick abdominal walls, even when the light has been most favorable; so that the bowel obstruction is not to be excluded when this sign is absent. The point mentioned by Dr. Bush, as to why the mortality should be 87% in enterostomy, performed for gangrenous hernia, and why it is 37% when the bowel is resected, is due in my opinion to the fact that resection is done early, before toxemia has developed, while enterostomy is performed in the last stage. This will account for the difference in the death rate.

Dr. Carpenter's statement in reference to stimulation I will answer by stating that the hypodermic syringe and saline infusion is practically unknown in my operating-room service, and it is due to the fact that my patient receives a very small quantity of anesthetic and is practically awake before leaving the table. My belief is that the surgical shock is not the result of the operation, but it is due to the excessive quantity of the anesthetic given. Post-operation nausea occurs but rarely in my service and I believe it to be also due to the fact that but a small quantity of ether is administered. The only indication to me for the employment of the saline infusion is where hemorrhage has occurred. Dr. Cooper brought up the point in regard to the blue line on the gums as a diagnostic point in lead poisoning. In my experience this is not pathognomic of lead poisoning. I have seen numerous cases of lead poisoning where the blue line on the gums was not present, and it is present principally with individuals who do not clean their teeth. The question of auscultation of the abdomen is very important. As I have stated, the position of the gurgling oftentimes makes it possible to locate the point of intestinal obstruction. In these cases the gas can be heard passing through the stenotic area.

SONOMA COUNTY.

Another fine meeting of Sonoma Medical Society chronicled. Dr. W. W. Kerr, of San Francisco, was heartily received, and he gave a lecture that all felt they could not have missed. The lecture will be published in full in the Journal. Dr. G. A. J. Scheuer was elected to membership.

After a fine chicken dinner the members autoed home, bringing with them Dr. Kerr, and arriving at Santa Rosa after midnight.

Ex-president Dr. J. W. Jesse has gone to attend the International Tuberculosis Congress, having been appointed by Governor Gillett a delegate.

G. W. MALLORY, Secretary.

SANTA CLARA COUNTY.

The regular Society meeting was held Sept. 16th in the Science Room of the new High School with the following members present: Drs. Jordan, Avery, Gallimore, Silvia, Hervey, W. S. Van Dalsem, Miller, Wagner, Smith, S. B. Van Dalsem, McGintl, Kapp, Hopkins, Simpson, Belknap, Kocher, Newell and Park. The visitors were Drs. Grant, Selfridge, Blake and Rucker of San Francisco, and Drs. Benepe, Bowen, La Breck, West and Wilson of San Jose. Three new members were admitted by application and one by transfer. Drs. H. B. Gates, Amelia Gates and D. R. Wilson by application and Dr. J. H. West by transfer from Contra Costa County.

Dr. Grant Selfridge read a short history on the subject of Bronchoscopy, as well as describing the instruments used. Lantern slides were used to show normal and pathological condtions met with in the use of the Bronchoscope. Drs. Selfridge, Blake and a nurse now prepared a patient for demonstrating the passing of the tube and after it was in place those present were given the opportunity of looking through the tube. Every one present greatly enjoyed Dr. Selfridge's paper and demonstration and we hope he will appear before this Society again.

Dr. Rucker of the M. H. S. gave a most interesting talk on "Plague as seen by the camera," using several dozen lantern slides to illustrate his remarks. As few of the physicians in this vicinity knew of the actual work done by the M. H. S. during the plague epidemic, the slides shown were of great interest, and if the applause given Dr. Rucker is any criterion, he and several hundred more slides will be given a royal welcome by this Society any time he can come here again.

K. C. PARK, Secretary.

ALAMEDA COUNTY.

The regular meeting of the Alameda County Medical Association was called to order at 8:45 p. m., President E. M. Keys in the chair. The minutes of the previous meeting were read and approved. Dr. A. Lilienerantz read a paper on "Fractures of the Skull," which was later followed by open discussion. The following resolution was indorsed unanimously by a standing vote:

Whereas, It has pleased Divine Providence to remove from our midst our esteemed colleague and brother, Dr. James P. Dunn, who by his professional attainments and skill, his service to public sanitation and his many good qualities of mind and heart have endeared him to his professional associates; therefore be it

Resolved, That we record our sense of loss at his untimely departure and extend our deepest sympathy to his bereaved family. Be it further resolved that a copy of these resolutions be forwarded to his widow.

Respectfully submitted,
DR. FRANK ADAMS,
DR. O. D. HAMLIN,
DR. H. G. THOMAS, Committee.

On the motion of Dr. H. G. Thomas a copy of the resolutions adopted by this society April 14, 1908, in regard to the plague situation, was ordered sent to the Board of Trade. Dr. E. N. Ewer read an official report of the plague situation, the work done, and present conditions, being the official report from the health office, signed by Dr. Long. The secretary read a letter from Dr. N. K. Foster, of Sacramento, endorsing our efforts in regard to the plague campaign.

Dr. A. Lilienerantz, synopsis of paper: Brain surgery is rapidly becoming a distinct specialty. Every surgeon, however, has a fair practical knowledge of what ought to be done in the ordinary injuries of the skull. 2½ per cent of all fractures are of the skull. Don't always look for the clasical symptoms, because these are likely to vary; you may have practically no symptoms beyond the history of an injury to the head. Don't expect to make an immediate diagnosis. Treat every case symptomatically until you are sure of diagnosis. In regard to the location of an injury to the brain, acute troubles are more difficult to locate than slow growths or chronic conditions. Differentiate between intra- and extra-dural troubles if you can. Lumbar puncture will often facilitate the diagnosis in regard to fracture. In severe injuries Cushing states that 90 per cent of those not operated on die, especially when confined to the base of the skull, 60 per cent die within twenty-four hours. The modern method of making a large bone flap freely exposing considerable area of the brain surface and replacing the flap without any loss of bone, I think a very great improvement. It gives the operator a better chance to work. Don't forget that it is quite impossible to tell on which side the clot may be, it is well known that the hemorrhage may be on the same side as the motor symptoms.

The discussion was opened by Dr. R. T. Stratton, who stated that he believed the wide open incision indicated when necessary, but not as a regular procedure, sub dural traumatism generally gives a higher temperature,—when in doubt always make a scalp incision and make a thorough examination of the skull. Drs. Bull, Adams, Porter and Buteau concluded the discussion. Dr. Buteau referred to a case that came under his care the fourth day after injury. The man had been beaten to unconsciousness by a gas-pipe thug, the lacerations in the scalp showed a dozen injuries, all of which were open and infected. A large scalp incision from the left temporal to the right posterior occipital region was made, and half the skull exposed, dissecting back the periosteum with the flap, the skull looked like a chicken board, the bones broken in small pieces, dirt and infeetion making their replacement impossible. Thirty-two square inches of bone were thrown away, ample drainage established, and the scalp replaced. The recovery was uneventful, patient regaining eonsciousness in two days. He attributed his success in this case, not to any special surgical skill, but to the radical measures adopted and the fact that the brain did not become infected.

During August 25th and 26th, Dr. Joseph Price of Philadelphia was a guest of this society. On August 25th a surgical clinic was held at the County Hospital; on the evening of August 26th a banquet was given in his honor at St. Marks, both of which were well attended.

The doctor proved himself a most genial guest, as well as a skillful surgeon, talking freely on all surgical questions; the clinic at the hospital included a perineal repair, vaginal hysterectomy and a laparotomy for pyosalpinx. One hundred and twenty-eight physicians were present, some forty automobiles being used.

Dr. Price congratulated Alameda County in having so many up-to-date hospitals and especially referred to our county institution, which was a first-class hospital and not an almshouse. He thought this institution far in advance of many of our eastern states. He thanked the society for the courtesies shown him and congratulated us on the harmony that seemed to prevail among the physicians here.

M. LEWIS EMERSON, Secretary.

CONCERNING THE ABBOTT ALKALOIDAL COMPANY.

"This Journal is in receipt of a letter, dated July 22, 1908, from Dr. W. C. Abbott, president of the Abbott Alkaloidal Company, which reads in part as follows: 'The good and welfare of the medieal profession, as well as justice to ourselves, demand that we no longer remain silent in this matter of the continued unjust and absolutely unwarranted attacks being made upon us through the Journal of the American Medical Association by a coterie of people led by its editor who are using its pages for some ulterior purpose best known to themselves.' The writer than says that a pamphlet explaining his position is being forwarded to us, and continues: 'We bespeak for this presentation your most earnest attention. The interest of the profession you serve demands that you peruse it carefully and that you express your sentiments fully in your own publication.'

"We are glad of the opportunity to reply publicly to this letter, and desire to speak plainly and definitely on several points.

"In the first place, the American Medical Association has put the Abbott Alkaloidal Company under the ban, not in a spirit of animosity and unfairness, but that the medical profession of this country may be made aware of the true character of this company and its officers. In questioning this act of the American Medical Association it must be realized that this association is an organized body of 30,000 physicians, for the most part representative men and good citizens. Moreover, the work and policy of this association is entirely in the hands and under the control of its House of Delegates, which is a legislative body composed of physicians chosen by ballot in regular meetings of all the various state medical societies, which, with their component county societies, represent an organization of 75,000 physicians, or five-eighths of all the practitioners of the United States.

"A thorough investigation has been conducted into the affairs of the Abbott Alkaloidal Company, with the result of laying painfully bare its modern schemes of high finance, together with its methods of working the medical profession. The evident conclusions are: (1) That the president of the Abbott Alkaloidal Company has used, and is now using, his position as a member of the medical profession as a commercial asset; (2) That the company is publishing what purports to be a medical journal devoted to the medical sciences and to the interests of medical practitioners, but which, to all intents and purposes, is a house organ devoted to the interests of the company and to the advertising of its products; (3) That the president and vice-president of the company, though engaged in commercial lines, are members of medical societies and use this membership in medical meetings to advance the interests of their firm; (4) That the same officers, for the same reason, flood the reading pages of medical journals with so-called original articles, which are but thinly veiled advertisements, e. g., 48 articles by Dr. Abbott, who is not in active practice, appeared in various medical journals during 1907, almost all of which dealt with the treatment of different diseases; (5) That by glowing promises the company has induced physicians to become financially interested in its business and thus users and promoters of its products.

"The pamphlet, entitled 'An Appeal for a Square Deal,' alias 'Dr. Abbott's Reply to His Critics,' was duly received. This is a 48-page booklet with a full page frontispiece of Abbott in his shirt-sleeves, together with thirty-five pictures of the company's plant, from the sugar-coating to the circular-sending department, which have no direct bearing on the text. The reading matter varies in substance from an appealing whine to the heights of braggadocio. It certainly is not an argumentative document, and a careful perusal of its full contents serves in no way to convince the thoughtful reader that the charges of the American Medical Association were at all unfounded or exaggerated. In fact, the whole thing is a huge, palpable advertisement, and we can only express our sympathy for those who may be gullible enough to be at all taken in by it. Any possible show of dignity is absolutely lost by the all-pervading atmosphere of commercialism and Abbottism and the ever-present grasping out for the cash, e. g., 'The greatest bargain ever offered, a six months' subscription to the best medical journal published (American Journal of Clinical Medicine, nee Alkaloidal Clinic), a post-graduate course, a 300-page text-book of "active principle" therapeutics, and a 9-vial pocket case filled, all for one dollar.' Not for one moment does the man seem to be able to divorce himself from his dollar-getting schemes, either in his business, his literature, his journal or his personal defense.

"If any of our readers do not wish to accept the judgment of any man in this matter, let him ask himself and likewise answer the following question: 'What special virtue is to be found in Abbott, his company, his journal or his manufactured products, that can not be as well, or better, obtained elsewhere?' Several of these features have already received our comment, but what about his products and 'active principles'? Alkaloids, as pure as he can manufacture, are by no means rare or unique as remedial agents, and, furthermore, investigation by expert chemists has shown that many of his products are neither 'alkaloids' nor 'active principles,' while not a few of them are typical nostrums. In other words, anything of value that Abbott may place on the market can be readily secured from reputable drug houses, while there are already enough houses from which nostrums of all shades and varieties can be purchased. As has been pointed out, the Abbott Company is equipped to furnish not only the theory, the principles and the practice, but also the drugs for their application. It certainly would seem that a physician who in any way lends his support to the Abbott Company is nothing more than a penny-in-the slot machine of which Abbott et al. hold the key.

"We have gone into this discussion in order to acquaint our readers with the facts as we see them, and in accord with our general endeavor to elevate the profession to which we belong, to make the M. D. of the physician stand for disinterested professionalism, to protect the doctor from the impositions of shrewd schemers, and to show that medical journals can succeed without endorsing the advertisements of fakes, nostrums and irregular business methods. It is very apparent that the editors of many medical publications are being 'worked' by the Abbott Company and that their official mouths are effectually sealed from uttering any words of protest by their acceptance of the Abbott advertisement.

"The burning question is, on which side should the physician and the medical journal stand? The middle ground is slippery and slants to the marshes and the mires."—The Old Dominion Journal of Medicine and Surgery, September, 1908, Richmond, Va.

UNIVERSITY OF CALIFORNIA HOSPITAL.

The University of California Hospital has been projected for some years, but the actual beginning of construction had been delayed owing to the difficulty of procuring the very large sum of money which was desired in order that the institution might start with a proper plant and an adequate endowment and that the Regents of the University and the faculty of the Medical Department might not have the burden of support upon them, as well as the task of management. These plans were, of course, necessarily abandoned at the time of the earthquake and the fire. But a step had been taken and that had been the removal of the first two years of the medical course from San Francisco to Berkeley, thus emptying all of the laboratories, recitation rooms, and lecture rooms occupied by the students of the first two years. Shortly after the earthquake, at a meeting of the faculty, it was decided that in view of the recognized difficulty of carrying the school without the hospital, and the now greater difficulty which was imposed by the crisis of the disaster, and also in view of the fact that hospital facilities were cryingly needed at that time in San Francisco, the faculty would undertake the task of raising money for equipping a part of the building for hospital purposes. In doing this, the original plan of having a fully endowed hospital which should be free to all of the poor of the State of California was regretfully abandoned, and it was decided that we would have a hospital similar to the other hospitals

in the city in which people should pay a per diem for their board, lodging and treatment, and that as soon as this had been established we would turn our attention to the seeuring of an endowment for the support of free beds on the basis of $10,000 for a free bed to be maintained in perpetuity.

The first money was given by Mr. Evan S. Pillsbury from the Roekefeller Relief Fund, an amount of $2000 which should be payable as soon as $8000 more had been subscribed. As soon as this $10,000 was obtained the work of remodeling certain parts of the building was begun, and the hospital was opened in April, 1907, with two wards of 15 beds each, and a maternity ward of ten beds, quarters for nurses and servants, operating room, laboratories, kitchen, dining rooms, etc.

In the summer of 1907 Mrs. William H. Crocker gave a second donation of $2500 for the equipment of another ward of 20 beds, which had become much needed, due to the crowding of the smaller wards. There were, in addition, some private rooms provided, most of them furnished by the Hospital, one was furnished by Mrs. Max Schwabacher and one by Mrs. Harry M. Sherman. An x-ray plant was given by Mrs. Henry F. Allen. Various members of the faculty gave apparatus for laboratories and the operating room and ward services. In all the money given as such, for construction and other purposes, is on the following list:

Donors and Donations.

Raphael Weill	$ 2,000.00
Rockefeller Relief Fund	2,000.00
J. J. Meyer	500.00
W. H. Bourn	250.00
Arthur Holland	50.00
W. H. Crocker	500.00
F. H. Buck	500.00
J. H. Hammond	500.00
Mrs. James Coffin	250.00
Mrs. Ethel W. Crocker	1,500.00
F. M. Smith	250.00
San Francisco Gas and Electric Co.	1,000.00
Dr. Harry M. Sherman	500.00
Dr. Wallace I. Terry	500.00
Dr. Thomas W. Huntington	500.00
Dr. Herbert C. Moffitt	500.00
General Geo. Stone	500.00
New York National Exchange Bank Fund.	500.00
McKillican Bros. Commission	224.77
Relief and Red Cross Funds	10,000.00
Raphael Weill	1,000.00
Mrs. Henry F. Allen	1,000.00
Henriette Lachman	500.00
Mrs. Wm. H. Crocker	2,500.00
Dr. A. A. D'Ancona	95.00
Massachusettts Relief Fund	100,000.00
Dr. Herbert C. Moffitt	20.00
Mrs. Jacob Roos (yearly subscription)	12.00
Mrs. Elizabeth Roos (yearly subscription)	12.00
Mrs. Gertrude S. Neustadter (yearly subscription)	12.00
Mrs. Max Schwabacker (yearly subscription)	12.00
Mr. Geo. H. Roos (yearly subscription)	12.00
Dr. Wm. Watt Kerr	500.00
A. L. Lengfeld	5.00
J. N. Sresovich	8.50
Dr. D. W. Montgomery	500.00
Burt L. Davis	100.00
Adam Andrews	100.00

The hospital is at present fairly well equipped for any kind of medical, surgical or obstretical cases; and it has treated, in the defferent services, nearly 1000 patients since it opened. About 150 babies have been born in the obstetric service.

As regards endowment, Doctor P. K. Brown, in the summer of 1907, approached the members of the Massachusetts Committee for the Relief of San Francisco in Boston, and urged them to give to the hospital $100,000 which was still in their hands, not then having been sent to the Relief Corporation of San Francisco. This gift was, with the consent of the Relief Corporation in San Francisco, and through them, paid to the hospital in the summer of 1908 and there are now established ten free beds in perpetuity named the Massachusetts Beds and these are filled by patients recommended by the Associated Charities of San Francisco, or designated by the Superintendent of the Hospital. Active efforts are in progress for the seeuring of a still larger endowment, and some endowments for single beds have already been promised.

It is the intention of the faculty to eonduct this institution on the highest planes so that it shall be to the West, and especially to California, what the famous big hospitals of the East are there. It shall be owned by the people of the State, the title is vested in the Regents of the University, and the management is in the hands of the faculty of the Medical Department. It is a suitable objeet for the generosity of those who wish their gifts to live after them. It should be a monument to the endeavors of those who have been instrumental in its organization and support.

PUBLIC HEALTH AND CONSERVATION.

Prof. Irving Fisher, the eminent political economist of Yale University, who in one of his papers before the recent International Tuberculosis Congress in Washington declared that consumption costs the people of the United States more than a billion dollars a year, is preparing an exhaustive report for the National Conservation Commission, which will contain not only these figures but similar data on the economic loss to the country from all other preventable diseases.

Prof. Fisher is a member of the National Conservation Commission and for many years has been carrying on studies along these lines. The Commission received letters from physicians all over the country urging it to consider the bearing of public health on the economic efficiency of the nation in its efforts to ascertain the resources of the country.

The Commission from the beginning has contemplated reports on the economic aspects of several phases of the Conservation movement which affect the duration and effectiveness of human life, but Prof. Fisher has undertaken to prepare a comprehensive statements of the whole subject of the relations of public health to the general field of Conservation, and especially as to the waste from preventable diseases and unnecessary deaths.

Dr. Fisher is professor of political economy at Yale University and chairman of the "Committee of One Hundred" of the American Association for the Advancement of Science, which has for a long time been carrying on propaganda for the increase of national health through the elimination of preventable diseases. This Committee of One Hundred is composed of physicians and men engaged in active sociological work in every part of the country, and the results of their investigations and experience are all available to Dr. Fisher, so that his report ought to be the most thorough-going and complete summary of the situation ever made.

At the Tuberculosis Congress, Prof. Fisher declared that 138,000 persons die of consumption every year. The cost of medical attendance and the loss of earnings before death average at least $2,400, he said, while if to this is added the money that might have been earned with health, the total loss in each case is about $8,000. He pointed out, also, that the disease usually attacks young men and women just at the time when they are beginning to earn money and cuts off their earning power for about three years on an average, before they die.

This subject of the economic value to the country of a general raising of the average health came up in the Governors' Conference at the White House in May. Dr. George M. Kober, in his speech on the "Conservation of Life and Health by Improved Water Supply" at the Conference presented figures which showed that the decrease in the "vital assets" of the country through typhoid fever in a single year is more than $350,000,000. Typhoid is spread by polluted water largely so that the death rate from this disease can be directly reduced by the purification of city drinking water. Dr. Kober quoted statistics to show that the increased value of the water to the city of Albany, where the typhoid fever rate was reduced from 104 in 100,000 to 26 by an efficient filtration plant, amounts to $475,000 a year, of which $350,000 may be considered a real increase to the vital assets of the city. Census Bureau figures show that the average annual death rate from typhoid in cities with contaminated water supplies was reduced from 69.4 per 100,000 to 19.8 by the substitution of pure supplies.

Dr. Kober cited estimates showing that the average length of human life in the sixteenth century was between 18 and 20 years, and that at the close of the eighteenth century it was a little more than 30, while to-day it is between 38 and 40; indeed, the span of life since 1880 has been lengthened about six years.

INFORMATION FOR MEDICAL STUDENTS.

From the Board of Medical Examiners.

Your careful attention is called to the requirements of the medical laws of California. Before an applicant can be permitted to take the examinations, he must present documentary evidence that he has graduated from a medical school, the requirements of which shall have been, at the time of granting such diploma, in no particular less than those prescribed by the Association of American Medical Colleges for that year.

The Association of American Medical Colleges requires, since 1905:

I. Before a student can enter upon his medical training, he must offer as a minimum requirement for admission, either:

(a) A Bachelor's Degree from an approved college or university; or

(b) A diploma from a university accredited high school, embracing not less than four years' study in the subjects required by the Association; or

(c) An examination in these subjects, as designated by the Association, totaling not less than thirty points;

(d) A certificate from examiners recognized by the State Board of Medical Examiners, viz: for Southern California, Miss Gertrude Henderson, Los Angeles; for San Francisco and vicinity, Prof. Harry Beal Torry, Berkeley.

II. A student may be allowed to enter on his medical work conditioned in not more than six points, but these conditions must be removed by satisfactory examinations before he is allowed to enter on the second year of his medical course. A student entering college with certificates other than those granted by the Board's recognized examiners, or entering upon his second year with matriculation conditions, is debarred for all time from taking the State Board examinations.

III. The curriculum of the medical school must include the subjects stated in the schedule of requirements of the Association of American Medical Colleges, and such subjects must be pursued the length of time therein stated.

Graduates in medicine have been refused the privilege of taking the examinations, because they had not fulfilled the requirements of the Association. To prevent such a difficulty, your attention is particularly called to the requirements of the State law.

	Minimum.
A. Required, 16 points.	
Mathematics (minimum, two years; maximum, three years), Algebra and Plain Geometry	4 Points
English (minimum, two years; maximum, four years)	4
(a) English Grammar.	
(b) Rhetoric and Composition.	
Latin (minimum, two years; maximum, four years)	4
(a) Latin Grammar.	
(b) Latin Prose Composition.	
(c) Reading four books of Caesar or equivalent.	
Physics (one year) with laboratory work	2
History (one year), including Civics and Political Economy	2
B. Elective, 14 points.	
English Language and Literature (two years). Only if taken after the required English	4
Language—German, French, Spanish or Greek (four years). Not less than one year in any one	2
Advanced Mathematics—Solid Geometry and Trigonometry (one-half year each)	1
Natural Science (one year), Biology (one year), or Botany and Zoology (one-half year each)	2
Physical Science (one year), Chemistry.	2
Earth Science—Physical Geography and Geology (one-half year each)	1
Physiology and Hygiene (one-half year)	1
Astronomy (one-half year)	1
Drawing (one-half year)	1

CHARLES L. TISDALE, M. D.,
Secretary, State Board of Medical Examiners,
927 Butler Building,
San Francisco.

ADDITIONS TO NEW AND NON-OFFICIAL REMEDIES.

To the list of articles accepted by the Council, which will appear in the Journal October 3, there have been added the following:

Panase (F. Stearns & Co.).
Panase Essence (F. Stearns & Co.).
Panase Tablets (F. Stearns & Co.).
Hemaboloids (Palisade Manufacturing Co.).
Spirosal (Farbenfabriken of Elberfeld Co.).
Gr. Eff. Bromide and Acetanilid Comp. (H. K. Mulford Co.).
Gr. Eff. Caffeine and Sodium Comp. (H. K. Mulford Co.).
Gr. Eff. Carlsbad Salt (Artificial) with Phenolphthalein (H. K. Mulford Co.).
Adrin Sol. 1:500 (H. K. Mulford Co.).
Adrin Tablets 1-65 gr. (H. K. Mulford Co.).
Adrin Tablets 1-100 gr. (H. K. Mulford Co.).
Adrin Tablets 1-200 gr. (H. K. Mulford Co.).
Adrin and Cocaine Hydrochl. Tabl. (H. K. Mulford Co.).
Adrin and Sparteine Sulphate (H. K. Mulford Co.).
Adrin Ointment (H. K. Mulford Co.).
Adrin Suppositories (H. K. Mulford Co.)
Adrin Comp. Vaginal Suppos. (H. K. Mulford Co.).

From the former list, Ichthyolum Austriacum has been omitted, and at the request of the manufacturer the title "Diabetin" has been changed to "Levulose, Schering."

BARRED FROM THE MAIL.

Post Office, San Francisco, Cal. Office of the Postmaster, September 10, 1908.

To the Publishers of California State Journal of Medicine, San Francisco, Cal.

Gentlemen:—I beg to inform you that I am in receipt of communications from the Assistant Attorney General for the Post Office Department, informing me that the Postmaster General has declared unmailable the advertisements of the hereinafter named parties as giving information where abortifacients may be procured or where criminal operations will be performed, in violation of Section 3893 of the Revised Statutes, as amended:

Mrs. Dr. Wagener, 2012 Folsom St.
Mrs. N. A. Reed, 1135 Turk St.
*Dr. G. W. O'Donnell, 1720 Geary St.
Dr. Sylvester, 517 Twenty-third St., Oakland, Cal.
Dr. Rosen, 1269 Fourth Avenue.
Dr. Gunn, 1632 Ellis St.
Dr. James Neal, 1438 Ellis St.
Dr. King, 719 Van Ness Avenue.
Dr. E. E. West, 1115 McAllister St.
Mrs. Dr. Dwyer, 1438 Ellis St.
Mrs. Dr. Kohl, 1524 Webster St.
Mrs. Dr. Wyeth, 1524 Webster St.
Dr. West and Dr. West and Company, 1035 Golden Gate Avenue.
Dr. and Mrs. Davies, 824 Valencia St.
Mrs. Dr. Meyers, 2012 Folsom St.
Mrs. N. A. Rees, 1135 Turk St.
Dr. G. W. Olcot, 1720 Geary St.
*Drs. H. C. Edwards and H. B. Bright, 517 Twenty-third St., Oakland, Cal.
Dr. Page, 1438 Ellis St.
*Dr. E. F. West, 1115 McAllister St.
Dr. J. Meal, 1438 Ellis St., Mrs. Dr. Lane, 1438 Ellis St., names assumed by Dr. J. Neal.
Mrs. Dr. Gwyer, 1115 McAllister St.
Mrs. Dr. White, 1524 Webster St.
Dr. Sims, 1035 Golden Gate Avenue.
*Dr. W. H. Griswold, 894 Eddy St.
Dr. Leek and Davis and Dr. Leek & Company, 824 Valencia St.
Dr. Carpenter, 504 Haight St.
Dr. Boughton, 792 McAllister St.
Dr. Smith, 1620 Ellis St.
*Dr. F. Thomas, 816 Turk St.
Mrs. De Cornelius, 701 Gough St.
Dr. C. C. O'Donnell, 912 Devisadero St.
The California Confinement Home, 2012 Folsom St.
Dr. Moore, 1720 Geary St.
Dr. C. C. Moore and Dr. G. W. Moore, 1025 Market St.
Dr. F. Kaner, 1438 Ellis St.
Dr. F. Gibson, 1438 Ellis St.
Dr. and Mrs. Maxwell and Mrs. Dr. Maxwell, 1524 Webster St.

You will please take notice that further copies of your paper offered for mailing at this office on and after September 14, 1908, containing any of these advertisements, will be refused.

Please acknowledge receipt of this letter.

Respectfully,
ARTHUR G. FISK, Postmaster.

[Note.—Names marked (*) are to be found in the register of licensed physicians.]

DR. A. W. HEWLETT GOES TO ANN ARBOR

It may be true that "Westward the star of empire takes its way," but certainly it seems to be the case that Eastward many of our men find their way. Some of the foremost writers and journalists in the country have been drawn to the East from California, and not a few of our physicians seem to follow the same fate. The latest desertion is that of Dr. Albion Walter Hewlett who has been chosen to fill the chair of Medicine at the University of Michigan, to take the place left vacant by Dr. Dock, who has gone to Tulane. Dr. Hewlett has contributed much to the progress of medicine in California and many of his articles have appeared in the State Journal. We certainly wish him every success in his new field of activity, and peace and happiness in his new home.

PROFESSOR CHARLES MINER COOPER.

It is a pleasure to announce that Dr. Cooper has been appointed Associate Professor of Medicine at Cooper College, San Francisco. We shall miss Dr. Hewlett, but the College will suffer no loss, as Dr. Cooper is so well qualified to carry on the teaching of medicine.

SEPTIC RESEARCH.

At the recent meeting of the San Joaquin Valley Medical Association, several physicians in attendance took occasion to inspect the sewage disposal plant of the City of Fresno. So keen was their interest that they all, with one accord, entered the septic tank and became intimately acquainted with new sewage. Dr. Ryfkogel reports the experience more exciting than interesting, but he says that after three hot baths and entirely new clothes, he could no longer smell himself. Be it known that the plank broke and thus added seven of our distinguished members to the contents of the sewage tank.

PUBLICATIONS.

History of the Medical Society of the State of New York. By James J. Walsh, M. D., Ph. D. Published by the Society, 1907.

Second Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. Department of Education, Sudan Government, Khartoum.

Progressive Medicine, Vol. III, September, 1908. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 285 pages, with 30 engravings. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00, carriage paid to any address. Lea & Febiger, Publishers, Philadelphia and New York.

Anatomy, Descriptive and Surgical. By Henry Gray, F. R. S., late Lecturer on Anatomy at St. George's Hospital, London. New 17th American edition, enlarged and thoroughly revised, by J. Chalmers Da Costa, M. D., Professor of Surgery and Clinical Surgery, and Edward Anthony Spitzka, M. D., Professor of Anatomy in the Jefferson Medical College of Philadelphia. Imperial octavo, 1625 pages, with 1149 large and elaborate engravings. Price, with illustrations in colors, cloth, $6.00, net; leather, $7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

Business Methods of Specialists, Or How the Advertising Doctor Succeeds. By Jacob Dissinger Albright, M. D. Published by the Author, 3228 North Broad St., Philadelphia, Penn.

In a little book of one hundred and ten pages, the

author has managed to give a deal of information about an interesting class of our profession, for these sons of Belial are of our profession, as engaged in healing the sick with drugs and otherwise. The most interesting chapter in the book is the one entitled "The Advertising Specialist's Guarantee," in which the author describes the different documents of a financially reassuring nature, given by charlatans to their patients. It shows quite clearly that when two men enter into a contract the advantage lies with the man who has studied out his plan of action, and has had practical experience. The novice is at the mercy of the initiated.

Another thing pretty clearly demonstrated is that the advertising specialist has his troubles too, and that the regular practitioner, following along the beaten path of professional life, has probably much less worry, more honor, and almost always more remuneration than his more showy but erring brother. Now comes the question: Is it worth while to study charlatans with a view to copying any of their methods? It is not. Their ways are not our ways, and never can be, and that is the main reason for keeping aloof from them. Those therefore who would buy the book with a view to getting anything helpful to their practice out of it, will find a disparity between the amount of money expended and the practical benefits received. D. M.

Contributions to the Science of Medicine and Surgery by the Faculty in Celebration of the Twenty-fifth Anniversary—1882-1907—of the Founding of the New York Post-Graduate Medical School and Hospital, 1908.

The 485 pages, to which the title of Contributions is given, contain 48 articles relating to medicine, surgery and allied branches. The great majority of said articles are faithful reproductions of the sterile short-cut methods which characterize the teaching offered the ticket purchasers at the New York Post-Graduate School. In the midst, however, of incomplete and useless case histories, a few points of interest may be gleaned. The recent graduate may read with profit the article by Beaumont Douglass, who enumerates at great length the disadvantages of post graduate study in foreign lands where one "is in constant turmoil and confusion"; whilst "the real, earnest and enthusiastic work and development of technique can be done best in the post-graduate schools of the United States."

De Garmo's article on bladder wounds in hernia operations contains interesting data. Warren Plimpton's dissertation on the correction of deformities following Pott's fracture is well written and richly illustrated with appropriate radiograms.

In a brief article entitled "a reminder that fatal or serious results may follow operative treatment of buboes," Eugene Fuller reports several fatal cases illustrative of the dangers attending the use of the curette.

By far the best article of the entire volume is by one unconnected with the Post-Graduate School, Sidney Jacobson, who, in reporting the microscopical findings of a case of true primary ovarian pregnancy, makes a most thorough review of the literature of the subject.

Nursing the Insane. By Clara Barrus, M. D., Woman Assistant in the Middletown State Homeopathic Hospital, New York. The Macmillan Company, New York, 1908.

Institutions for the insane have within the last decade undergone striking and important changes. For years merely regarded as places of detention and custody, they have evolved into modern hospitals, which aim to provide, not only comfortable and hygienic surroundings, but scientific treatment directed to the amelioration and sometimes the cure of the mental conditions. The advances made in handling insane patients lie largely in the perfecting of the nursing; and that the training of nurses and attendants for this class of patients covers a much wider field than that of the ordinary trained nurse is quite evident. "She must safeguard them from injuring themselves or others, must possess many of the qualities that make a good teacher, since a part of her duty is to help correct faults in early training and development, and to encourage and train to correct and useful and proper behavior; she has also to employ and entertain her patients, under the direction of the medical officers; and to her is entrusted that almost constant association and companionship which, if sympathetic and judicious, is one of the most potent means of restoring her charges to mental health." It has, therefore, been apparent to those connected with the administration of insane asylums, that a text-book containing the essential points of such nursing has long been desirable. In this book we find the special instructions required, together with naturally the essentials of ordinary nursing. We unhesitatingly recommend the perusal of it to all classes of nurses, as well as physicians in touch with insane patients. A. J. L.

DEATH OF MRS. WILLS.

The death is announced at Los Angeles of Mrs. Charlotte Le Moyne Wills, mother of Dr. Wm. Le Moyne Wills, who was for many years one of the best known residents of Los Angeles; prominent there in philanthropy, as a woman suffragist, and as one of the founders of the Friday Morning Club. Mrs. Wills was the daughter of Dr. Julius Le Moyne, who introduced cremation into the United States, he having built the first crematory in this country in 1876, at Washington, Pennsylvania. Mrs. Wills shared the views of her father and was instrumental in having built in Los Angeles the Rosedale Crematory, which was construted in 1887. Until age and illness practically confined her to her home, Mrs. Wills was actively engaged in the social and philanthropic work for which she was noted, and few medical men of California have been to Los Angeles without meeting her. But few of them probably knew that, by her successful advocacy of cremation, she was a practical coworker of theirs in sanitation.

CHANGE OF ADDRESS.

Parsons, E. W., from 2580 Mission st., to 2597 Mission st., San Francisco.

Wemple, Emmett L. R., from 1059 O'Farrell st., to 240 Stockton st., (Schroth Bldg.) San Francisco.

Salomon, Max, from 1059 O'Farrell st., to 240 Stockton st., (Schroth Bldg) San Francisco.

Weis, Arthur H., from 1546 Ellis to 16th and Mission, San Francisco.

Frederick, M. W., from 2152 Sutter to 135 Stockton st., (Butler Bldg.) San Francisco.

Horstmann, E. H., from Los Angeles to German Hospital, San Francisco.

McCarthy, Isaac A., from Union Trust Bldg., Los Angeles, to 1264 W. Adam st., Los Angeles.

Bock, Chas., from 703½ Central ave., Los Angeles, to Palms Springs Sta., Riverside County ,Cal.

Avery, Ralph W., from 1005 Fair Oaks ave., So. Pasadena, to Alexander Bldg., So. Pasadena.

Griffin, Chas. Franeis, from 3144 24th st., to 2804 Folsom st., S. F.

Watt, Fred W., from Pinogrande, El Dorado Co., to Morgan Hill, Santa Clara Co., Cal.

Baker, Clarence C., from 2186 Bush st., to 1028 Market st., San Francisco.

Titchworth, Jas. C., from 2980 Bush st., to Sherwood, Cal.

French, J. Rollin, from 520 St. Louis st., Los Angeles, to Spinks Bldg., 5th and Hill sts., Los Angeles, Cal.

Hindman, S. J., from Moncta and Slauson aves., to 55 Moneta ave., Los Angeles.

Allen, Chas. Lewis, from San Fernando Bldg., Los Angeles, to Pacific Electric Bldg., Los Angeles.

Dudley, Wm. H., from H. W. Hellman Bldg., Los Angeles, to Pacific Mutual Ins. Bldg., Los Angeles, Cal.

Moore, Will H., from San Diego, Cal., to Sykeston, North Dakota.

Pope, Fred'k S., of San Jose, Cal., traveling abroad.

Gedney, Fred'k M., from 1696 Sutter st., to 304 Clement st., San Francisco.

Wright, Fred'k L., from 1169 Broadway, Oakland, to 1155 Broadway, Oakland.

Smith, Dudley A., from 1111 Washington st., Oakland, to Union Sav. Bank Bldg., Oakland, Cal.

Liliencrantz, A., from 359 Telegraph ave., Oakland, to First Nat'l Bank Bldg., Oakland, Cal.

Irwin, W. H., from Macdonough Bldg., to First National Bank Bldg., Oakland.

Hadden, David, from 2716 Telegraph ave., Oakland, to Wright Bldg., Berkeley, Cal.

Hector, Robert, from 1908 Shattuck ave., Berkeley, to Wright Bldg., Berkeley.

Reinstein, Arthur H., from 2597 Sacramento st., San Francisco, to Veterans' Home, Napa, Cal.

Rice, Weston H., from 577 Telegraph ave., to 229 Telegraph ave., Oakland, Cal.

Sutherland, Hester M., from 2605 Ashby ave., Berkeley, to Fabiola Hospital, Oakland, Cal.

Carlson, Chas. H., from 1823 Geary st., to Union Square Bldg., 350 Post st.

Mace, Lewis S., from 1059 O'Farrell st., to Schroth Bldg., 240 Stockton Bldg., San Francisco.

Chipman, Ernest, from 2400 Pacific ave., to Schroth Bldg., 240 Stockton st., San Francisco.

Minaker, Andrew J., from 1278 Market st., to 146 Grant ave., California Optical Bldg., San Francisco.

West, Jacob H., from Black Diamond, Cal., to Bank of San Jose Bldg., San Jose, Cal.

Arbogast, J. L., from St. Helena, Cal., to 719½ K st., Sacramento, Cal.

Bennett, Laura B., from San Pedro, Cal., to Wright & Callender Bldg., Los Angeles, Cal.

Kress, Geo. H., from the Johnson Bldg., Los Angeles, to Bradbury Bldg., Los Angeles.

Chapline, Frank L., from Los Angeles, to Orange, Cal.

Roth, Leon J., abroad for a year.

E. Myrtle Wellcome-de Blois, from 1329 So. Grand ave., Los Angeles, Cal., to Brawley, Imperial Co., Cal.

Powers, Geo. H., from 1214 Polk st., to 111 Ellis st., (Powell Bldg.) San Francisco.

Hoffman, Lawrence H., from 3014 Washington st., to Butler Bldg., (135 Stockton st.) San Francisco, Cal.

Baker, Wood C., from address unknown, to San Mateo, Cal.

Beasly, M. E., from address unknown to Vista Grande, San Mateo Co., Cal.

Schulze, Otto T., from U. C. Hospital, San Francisco, to Veterans' Home, Napa, Cal.

Bulson, Chas. H., from Ochsner Bldg., Sacramento, to Veterans' Home, Napa, Cal.

Duncan, Franklin T., from Sutter and Webster sts., San Francisco, to 1353 Broadway, Oakland.

Mauzy, Wm. Peter, from 654 14th st., Oakland, to 570 Williams st., Oakland.

Morse, Fred W., from 1204 Harrison st., Oakland, Cal., to Oakland Sav. Bank Bldg., Oakland.

Northcott, E., from 3028 E. 17th st., to 3116 E. 14th, Oakland.

Bishop, Simeon from address unknown, to 3rd ave., and Clement sts., San Francisco, Cal.

Deane, Tenison from address unknown, to Ukiah, Cal.

Freedman, Chas., from address unknown, to Redondo, Cal.

Gardner, J. F., from address unknown, to 1204 Railroad ave., San Francisco.

Grissim, Jno. De L., from address unknown, to 1111 Washington st., Oakland, Cal.

McCue, Jas. E., from address unknown, to Central Bank Bldg., Oakland, Cal.

Owen, G. R., from address unknown, to San Bernardino, Cal.

Pyle, F. S., from address unknown, to Valencia and 22d st., San Francisco, Cal.

Powell, Thomas, from southwest corner 8th and Hope sts., Los Angeles, to Columbia Trust Co. Bldg., Los Angeles, Cal.

Mosher, Clelia Duel, from 1100 Bryanti st., Palo Alto, to 1094 Emerson st., Palo Alto, Cal.

Day, Robert V., from Bradbury Blk., Los Angeles, to Lissner Bldg., Los Angeles, Cal.

Creamer, M. S., from 3146 Vermont st., Los Angeles, to 501 Homer-Laughlin Blk., Los Angeles.

Stafford, Owen R., from 4206 Vermont ave., Los Angeles, to 3754 Vermont ave., Los Angeles, Cal.

Spalding, Alfred Baker, from 2510 Washington st., San Francisco, to 240 Stockton st., (Schroth Bldg.) San Francisco.

New Members.

Scheuer, G .A. J., Guerneville, Cal.

Force, J. N., 3223 College avenue, Berkeley, Cal.

Bingaman, Elmer W., Soledad, Cal.

Reynolds, Geo. E., Haywards, Cal.

Smith, Arthur M., 876 Adeline St., Oakland, Cal.

Mays, Wm. H., First Nat'l Bank Bldg., Oakland, Cal.

Grissim, Jno. De L., 1111 Washington St., Oakland, Cal.

Bixby, W. E., Union Sav. Bank Bldg., Oakland, Cal.

McClurg, Katherine, Union Sav. Bank Bldg., Oakland, Cal.

Stone, Earl A., 1111 Washington st., Oakland, Cal.

Maston, B. B., First Nat'l Bank Bldg., Oakland, Cal.

Benton, Julian J., 2108 Shattuck ave, (Shattuck Bldg.) Berkeley.

Dietz, Henry Louis, 1630 8th st., Oakland, Cal.

Duncan, Franklin T., 1353 Broadway, Oakland.

Pardee, Geo. C., Oakland Sav. Bank Bldg., Oakland.

Prather, D. J., 1219 Broadway, Oakland.

Browning, Fred'k W., Haywards, Cal.

Medros, Joseph J., Haywards.

Gates, H. B., San Jose, Cal.

Gates, Amelia L., San Jose, Cal.

Wilson, D. R., San Jose, Cal.

Wintermute, Geo. Preston, Oakland, Cal.

Beetle, Clarence Hollman, Berkeley, Cal.

Deaths.

San Francisco Co.—S. R. Mather.

San Francisco Co.—Herman F. Maleck.

Los Angeles Co.—Orlando T. Pratt.

Alameda Co.—Cyrus Hamilton Allen.

San Diego Co.—George T. Greenleaf, formerly of Redlands, Cal., died in Holtville, Cal.

San Diego Co.—Thos. K. Smith of La Jolla, Cal.

Los Angeles Co.—David M. Goodwin, Los Angeles, Cal.

Los Angeles Co.—Lloyd G. VanScoyoc, Los Angeles, Cal.

San Francisco Co.—Walter F. Percival, San Francisco.

Amador Co.—Benj. T. Freshman, Amador City, Cal.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. VI DEC., 1908. No. 12

EDITORIAL NOTES.

THE END OF THE YEAR.

With this number of your JOURNAL ends the sixth year of its life. With this month, too, ends another year in the life of every one of us, for no matter when the birthday may come, we instinctively, as did the ancients, measure our years—that which man calls time—by the changes upon the great sun dial of nature. The six years that have passed have been very notable ones in American medical history. They have seen the reorganization of the entire medical profession of the United States. They have witnessed the growth and development of the American Medical Association to a point where it has become the largest and probably the most influential medical organization in the world. During their passage the *Journal of the Association* has become by far the most comprehensive and in many ways the foremost medical journal published. To mention the fact that during this period the death knell of the fraudulent nostrum has been sounded by the Council on Pharmacy and Chemistry, is but to state a fact now recognized by all. Medical education has been almost revolutionized in about the same period, and the results of the work of the Council on Medical Education will be more far reaching than many of us can at this time realize. Six years ago there was no thought taken of the necessity of popular education on things pertaining to public health; today there is not a state in the Union in which such popular lectures have not been given and the work is growing and becoming systematized. In our own state this brief period of years has seen many changes. Our State Society has grown from a mere handful of men to an organization including within it nearly two-thirds of the active practitioners in its territory. Its component parts—the County Societies—have become, in many counties, factors of the greatest importance and benefit to their respective communities. There was a time when a certain insurance company sent out a circular to the effect that the three-dollar cut-rate fee for examinations had been accepted by physicians in all the United States "except California and some of the Southern states"; but it was *not* so accepted. Your JOURNAL has been in the thick of many fights and has become known in every city in the land as the mouthpiece of a society that is strong enough to fight (actively) for what it knows to be the right—and in spite of many threatened libel suits. The great American bluff does not always work. Troubles there have been, of course; there will always be troubles, large or small. It was a hard fight to keep going and pay bills, after the fire, and the loss is still most keenly felt; yet the JOURNAL is alive and the records of the Society are being slowly reaccumulated. The past year's business depression has touched us with no light finger; but we will make out to live in some fashion—and to keep on fighting for truth and honesty. And so the years go. May those to come bring to us harmony, prosperity and happiness; the little troubles will soon be forgotten.

INSULTING TO US ALL.

The culmination of insult upon insult heaped, not alone upon every citizen of California from San Diego to Crescent City, but upon every American citizen, was reached when Francis J. Heney was shot down in court during his trial of Abe Ruef in the United Railways bribery case. For months the law has permitted, and many citizens have applauded, not the trial of those indicted for crime, but the trial of judges, attorneys for the prosecution, witnesses, prospective jurors and every one who raised his voice for decency, honesty and right. The whole social structure of the state has been almost openly debauched by the "higher-ups" until, as Charles Wheeler said at a mass meeting on November 14th, it has become a mark of distinction for a wealthy man to enter social life with his dress clothes plastered with indictments. Nearly every influential paper in the state has been almost openly bought by the wealth of the bribe givers. Heney has been reviled, ridiculed, cartooned, slandered and abused in a manner to excite the anger and the active resentment of every decent, clean-minded man. And for what? For his effort to try and convict *a self-confessed criminal and those who paid him bribe money!* And for whom has Heney been fighting? Not for himself, for he has not been paid a cent nor is to receive anything. His fight is for you and for me; for

honesty and justice; to secure equal punishment for rich or poor when an honest administration of justice has been prevented by bribery. Already every effort is being made by the "higher-ups" and their purchased press to create the impression that Haas was crazy. Possibly so; and possibly he was afflicted with the same form of insanity as the men who tried twice to get rid of the pivotal witness by dynamite. Our higher-up judges, "friendly" to the machine and to wealthy corporations, its friends, eagerly seize upon the slightest technicality to release *self-confessed criminals,* while at the same time they deal out contemptuous comment upon an honest judge trying honestly and in the face of the strongest pressure, to do his simple duty. How long will the thinking people tolerate this assassination of justice and travesty on law and order?

GERMAN HOSPITAL.

On another page of this issue, the JOURNAL presents a communication from one of the members of our society upon the subject of the editorial contained in the October number and referring to the German Hospital. Some of the criticism voiced by our correspondent is just; some of it is ill founded and some part of it will doubtless always remain in the debatable territory. The German General Benevolent Society was founded as, and we believe in the main has always been conducted as a true benevolent institution that has been of the greatest benefit to a large number of its poorer members. As a part of its work, a hospital is required; recently it erected a magnificent building that will accommodate something over two hundred patients and, we understand, accumulated an indebtedness of several hundred thousand dollars in so doing. At the very outset we may concede without argument that it is a shame that a feeling of resentment and antagonism should exist on the part of a large number of physicians against the institution and thus prevent them from making use of the hospital. At the same time we must concede that there exist in the institution certain very objectionable features which fully account for and warrant the antagonism of the majority of our profession. An illustration will point out these abuses. It is reported that quite recently a patient consulted a physician in San Francisco who discovered a condition requiring surgical interference. He referred the patient to a surgeon who happened to be a member of the staff of the German Hospital; the diagnosis was confirmed and operation advised and consented to. A proper fee of several hundred dollars was to be charged, and the patient could well afford to pay the fee. But the matter was put off for a short time and during the interval the patient learned that he could become a member of the German General Benevolent Society and thus secure surgical attention free—or on the payment of the nominal monthly charge. He did so. The very same surgeon whom he had previously consulted was thereupon called to operate—for nothing! The existence of the institution, or of its bad features, made it possible for this surgeon to be deprived of his legitimate charge.

LESSONS TAUGHT.

Let us analyze the foregoing case, the facts of which are reported on the best of authority. In the first place, the surgeon was deprived of his honest fee; a fee which the patient could afford to pay. In the second place, the physician who referred the patient to the surgeon has lost a patient, for he may now receive all medical attention at no greater expense than the payment of his dues to the Society. In the third place, the hospital itself has lost money, for the patient paid less for hospital expenses than he otherwise would have paid—and which, be it remembered, he could afford to pay. In the face of facts illustrated by this case (and many others of a similar character might be mentioned) is it to be wondered at that physicians resent the occurrence of such incidents and the existence of an institution which permits them? Several hundreds of dollars were diverted from the regular course into the pockets of the surgeon and no one—save the patient in question—profited by the transaction; and he did not need or require the profit. Membership should be limited to those of very modest income who, in the event that they become incapacitated for work, do not therefore become a burden upon the community. Or, if membership is not thus limited, the right of any member to make use of the hospital facilities without payment, should be abolished. Very few physicians have a large income. They all do an enormous amount of work gratuitously and for pure charity. Is it right that they should be forced to give their attendance to people who can well afford to pay proper fees for it? Furthermore, no person not a member of the Society who reaches the German Hospital through or by means of a physician, should at any time thereafter be permitted to join the Society. If the German General Benevolent Society will make such changes as to prevent any of its members who can afford to pay legitimate fees for medical service from obtaining such service free (cut this "dollar-a-month" business down to those who really need it) and, secondly, if it will further protect the physicians of California by refusing membership to persons who are accustomed to consult and pay fees to a physician, and who can afford to do so, and also to those non-members who may be sent to the hospital as private patients of physicians—if it can and will do these things, then it should receive its full measure of professional support.

HOSPITAL ABUSES.

In his letter, Dr. Kreutzmann opens up the whole question of charity hospitals and hospital abuses. That there are always some people who will and do abuse every charity that has been or could be created, is well known. Every charity hospital that ever was run, has at some time or other been abused by some people. Every

dispensary is treating people, in greater or less numbers, who could and should pay physicians' fees. But that has nothing to do with wholesale abuses that could and should be stopped. The argument made by our correspondent to the effect that the University of California Hospital "is taking money out of the pockets of physicians" by competing with hospitals owned by physicians, is too lame for serious discussion. That is purely and simply competition on commercial ground; if a physician starts a private hospital it is his venture in commercialism—he is doing business—has become a business man subject to business or commercial competition; the running of a hospital for a profit is in no way a part of the liberal profession of medicine. In the case of the particular hospital mentioned, it is not a commercial enterprise; it is not founded for nor to be operated for the purpose of making money. If one enters here and pays fees, what he pays goes to help in maintaining the hospital for the use of those who cannot pay. Furthermore, the University of California Hospital and the Lane Hospital give back to the people of the state a large return; they are teaching institutions and they aid vastly in the training of our medical students. Where does the medical world profit—and through it all the people—from the immense amount of material that is passing through the German Hospital and its ilk? Occasionally some member of the staff of such an institution makes individual contribution to medical knowledge; but this is rare; in the main, it is wasted.

ELECTION RESULTS.

Nobody took much interest in the presidential election, but a good many people were very much interested in the campaign of Hughes of New York. The people won. Probably of next importance was the judiciary contest in San Francisco. An honest judge was elected, against almost impossible odds, and one who had lost the confidence of the people was defeated. Occasionally we contemplate the spectacle of the average citizen yawning, stretching himself and getting up to go out and vote; and then he lapses once more into troubled somnolence. But the "machine" never sleeps; and so, never has to rouse itself. It works all the time; and thus it gets what it wants and the "average citizen" rubs his eyes, when it is all over, and wonders how it happened—or else swears at the "machine" instead of at himself. Let us thank the good Lord that the "machine" is no more grasping than it is, for we are at its mercy.

THE RECENT CONGRESS.

The many reviews and published reports of the recent International Tuberculosis Congress but accentuate the utter impossibility of completely presenting the results of such a large and unwieldy aggregation. There is no point of perspective. Viewed broadly, the Congress was an immense success from the sociologic point of view. It attracted the notice and the attention of millions of people to preventive work in tuberculosis. Most of the countries of the world were spurred to extra work on this particular subject, and even our own national government actually produced some matters which will tend to favorably affect public health—a thing almost unprecedented (of course excepting the work of the U. S. P. H. & M. H. S.). Many thousands of people were attracted to the exhibits and doubtless some few learned that it is no actual loss in dollars and cents to provide their tenants with sufficient light and air. In all the sections was a singular unanimity of expression of the all important necessity of educating the public, which may be taken as the key note of the congress. Much space has been given to the contention between Koch and everybody else, in nearly all the journals, and the subject seems hardly worth it. Were Koch a less notable figure, were it not for the fact that he discovered the bacillus tuberculosis, no great amount of attention would have been given to this difference of opinion. Twice has he changed his mind and he may do so many times again; that will in no way affect the facts that are known or will be discovered. Discussion upon matters of mere opinion is a sad waste of time. Furthermore, it is immaterial whether the bovine bacillus produces pulmonary consumption in man or not; it is admitted that it does produce other forms of the disease in man, and all are equally undesirable. Tubercle bacilli in milk do not make it more appetizing. A tempest in a tea pot, forsooth. If a man is right, time will prove it; if he is wrong, the fact will in due course be known, and this whether the whole world is with him or against him.

A CURIOUS CONDITION.

For the first time in the history of the state, if we are correctly informed, a physician has got out an injunction to prevent a committee on ethics of a medical society from investigating charges made against him. In San Francisco, it is reported, Dr. Canac-Marquis was charged with having agreed to and attempted to perform an abortion. The matter was referred in the regular way to the committee on ethics and the doctor was duly notified. He immediately went into court and asked that the committee be enjoined from interrogating witnesses or in any way proceeding with the investigation. Owing to faulty wording of the by-laws and to the fact that the charges were not correctly presented, the injunction was made permanent. What will happen next?

DIAGNOSIS OF SYPHILIS.

We are beginning to hear quite a little of the serum diagnosis of syphilis, though it is as yet a very long way from being an everyday possibility. Nevertheless, as a definite scientific advance it seems to have passed the stage of question and is to be accepted as a fact. The Wassermann method, so-called, which is based upon hemolysis, is, for practical purposes, impossible. It is quite possible, however, that the serum method of Fornet and others will subsequently be

demonstrated a safe and reliable test. It is based upon the formation of a turbid ring at the junction of two sera, the one taken from an active syphilitic the other obtained from a late convalescent or one in the ataxic stage. This method appears to be promising, for it certainly has simplicity to commend it and so should soon receive enough attention to bring out reports that will be conclusive. The last few years have shown marked advances in our knowledge of this aggravating disease, and from the present general interest in the work on syphilis we may safely predicate still further and more valuable discoveries in the immediate future.

"CAN THIS BE TRUE?"

In asking this question, the *St. Louis Medical Review* refers to an editorial published in this JOURNAL some little time ago in which the statement was made that no physician had the knowledge or the ability to determine whether or not the statements of a manufacturer in regard to his preparation were true or false. Physicians are not chemists; nor yet are they pharmacologists, and if they were they are far too busy to undertake long and tedious analyses to find out the composition of the remedies they are asked to use. This work the Council on Pharmacy and Chemistry does, gratuitously, for the whole medical profession, and the JOURNAL urged that we should believe only the Council, for the reason that all manufacturers had, at some time and in some instances, lied to us. The JOURNAL said "You cannot depend on your own judgment, for you do not know enough to judge." Once more we submit that that statement is absolutely true. The *St. Louis Medical Review* was, at one time, edited by a scholarly gentleman; one who knew, as the present editor does not, that the first rule of journalism is to refrain from mentioning the editor of a publication by name. We do not know who the present editor is, and in spite of his threat that we shall "hear from him in the shape of physical retaliation," we beg to advise him that he brays like a Rocky Mountain nightingale and that *he* is absolutely incompetent to judge of the composition of the remedies he is asked by the manufacturer to use. As he advertises, among others, anasarcin and the Peacock line of nostrums, however, we suspect that his judgment is all right when it comes to determining the number of cents in a dollar. On your way, and trouble us no more.

HEMATURIA WITH REPORT OF CASES.*

By GRANVILLE MacGOWAN, M. D., Los Angeles.

The manifest presence of blood at the mouth of the urethra, or mixed with the urine, is a symptom which alarms the person in whom it occurs, and not infrequently terrorizes his medical attendant. To be of value any treatment for this condition must follow upon a knowledge of the source of the hemorrhage.

Until of very recent years there was much of the occult about hematuria. With most learned and scientifically ponderous reasoning, consulting physicians, commonly by deductive analysis, fixed upon the bleeding spot, and then often, by operation, or post-mortem section, proved what poor guessers they were. This good work still goes on, though the means exist by which surmising as to the origin of the hemorrhage is, except in the rarest instances, rendered unnecessary.

By the agency of urethrascopes and cystoscopes of various patterns it is readily possible to explore the urethra, the bladder, the ureters and the pelvis of the kidneys, and exact information of the cause and the place of a hemorrhage of the genito-urinary tract may be obtained in nearly every case.

In many books rules for differential diagnosis in cases of hematuria may be found: by the color of the blood; the size and shape of the clot; the chemical analysis of the urine; whether the blood precedes, is mixed with, or follows the urinary stream; the source of the hemorrhage is sought to be established. None of these features have any exact worth, for hemorrhage from a kidney may be so profuse that it is pissed almost arterial in hue, being very rapid, one bladderful may be hardly expelled before the necessity of urinating is again present.

It is true that when blood appears at the meatus in intervals of urination the source of the hemorrhage is nearly always in front of the deep transverse perineal muscles; but to this there are frequent exceptions, many of them striking.

1. 2/25/08. S. M., 82 years old, retired merchant, sent to me by Dr. Rogers of Tucson, has retention and profuse hematuria. Two months ago his first hemorrhage occurred suddenly and was followed by retention. He has had three attacks; the present one has now lasted a week, and has been very severe —the urine is full of clots. There is retention to 400 cc's. He strains, and passes a little urine at times. Blood appears, sometimes, at the meatus, in the intervals between urination or the use of the catheter. 2/27/08. Perineal section, and removal of a carcinomatous prostate; the left half of the prostate was already loosened from its capsule and nearly destroyed by the disease. He was up and about in ten days with the wound closed. At the end of the second week renewal of the hemorrhage tenesmus, and invasion of the perineal scar by the growth, necessitated sectio alta and permanent drainage, since which he has been comfortable.

When blood suddenly appears, at or toward the end of urination, in a previously clear stream, it is reasonable to place its origin, either in the bladder close to the outlet, or within the prostatic urethra,

---

* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

or from the prostate. It is often of importance that this shall be accurately determined, and it can only be done by the use of an instrument through which we can see; for sometimes, in a typical condition of this sort, the blood comes altogether from points anterior to the membranous urethra.

2/6/08. Mr. B. B., 40 years of age, rancher, single; sent by Dr. Sheppard. In January, 1908, he noticed smarting upon passing urine, this was followed in a week by painful hematuria, the blood apeparing toward the end of urination. His general health had been bad for two months, and he had lost fully fifteen pounds in weight. Inspection of the urethra through a small endoscope, 20 F., showed many granular patches, which ceased in the posterior portion of the bulb. The right side of the prostate was harder than the left. When urine was passed in three glasses, the centrifuged sediment of the last glass did not contain any blood. Search for tubercle bacilli, and the guinea pig test proved negative. The hematuria has ceased, and his general health appears to be restored by gradual dilation of his urethra and the application of strong silver solutions, through the endoscope, to the granular patches.

It is also true that, often, in moderate hemorrhage from a kidney, at intervals the blood coagulates in the ureter, and lies there long enough to become partially fibrinous before it is dislodged, causing the appearance of long, thin, fishworm-like clots in the urine from time to time; but I have seen very similar clots occur in slow hemorrhage from villous growths situated in the bladder near the ureteral mouths, where the jets of urine projected steadily against the bleeding point caused the clot to wave back and forth in the urine, like kelp in the rise and fall of the tide. I have seen a slow hemorrhage from an overlarge, congested or ulcerated, verumontanum, which blocked up the natural free passage from the prostatic urethra to the bladder, prevented the flowing of the effused blood into that viscus, and hindered any forceful outflow of urine at the time of emptying the bladder, produce clots, that in no way could be distinguished from those which form in the ureters.

In the course of extra peritoneal operations for renal hemorrhage I have several times watched the blood issue from the pelvis of the kidney and pass down the ureter in a long undulating series of successive small clots, or descend in frequent waves which did not clot at all.

2. Dec. 8/1900. H. E. W.; 35, patient of Dr. Stoddard; occupation merchant; had a profuse painless hematuria in 1892 following heavy lifting; this was repeated later after an exciting coitus but ceased without treatment. Two months ago, after a fever accompanied by chills, there came an attack of dysuria—and the appearance of blood in the urine at the end of urination. The hematuria in a few days became profuse, was accompanied by paroxysmal pain in the back, and tenderness on pressure, particularly in the right side. In two months he had lost thirty pounds and become gravely anemic. Upon cystoscopic examination blood was seen coming from the right ureter. October 22nd nephrectomy through an Abbé incision. The ureter was inspected on the up-rolled peritoneum. Blood could be seen coming out of the pelvis of the kidney and passing down the ureter in interrupted spurts; it would clot about halfway down, and the clots then squeeze toward the bladder, their place being taken immediately by those following. This kidney was soft, deeply congested, and bled inordinately upon section. It looked purpuric. Many sections from it were examined by Dr. Black; no definite pathological change was found in it. But the man got well, and remains perfect in health until this writing.

The seat of hemorrhage may be: 1. The anterior urethra; 2, posterior urethra and prostate; 3, seminal vesicles; 4, bladder; 5, ureter; 6, kidneys.

Hemorrhage from the anterior urethra may arise from: mechanical injury, gonorrhea, stricture, warty growths, tuberculous ulcers.

(2) Hemorrhage from the posterior urethra may arise from: enlarged or inflamed verumontanum, posterior urethritis, inflammations of the prostate; which may be gonorrhœal, tuberculous, from mixed infections; or arise from syphilitic gummæ or cancer, stone or mechanical violence; and the source of the blood may be a seminal vesiculitis.

3. Hemorrhage from the bladder may arise from: cystitis, usually trigonal; edema of bladder neck and interureteral fold; ulceration of projecting adenoma of the prostate, non-malignant; stone; tuberculous ulceration; simple ulcer; patchy gonorrheal cystitis; talangiectasis of the posterior slope between the vesical outlet and the ureteral openings; new growths, simple and malignant; bilharzia; mechanical violence, frequently from sounding.

4. Hemorrhage from the kidneys may be from: tuberculosis; essential or without appreciable cause; nephritis; violence; stone, sometimes in form of uratic or oxalate showers; malignant growths; papilloma, angiomatous degeneration of a papilla; disease of the adrenal; movable kidney.

5. Or hemorrhage may arise solely from diet, drugs, hemophilia, or degeneration of the blood due to disease, as in variola, typhoid and malaria.

6. Hemorrhage from the ureter may come from the presence of stone; new growths; tuberculosis.

V. Hemorrhage from the anterior urethra due to mechanical violence is commonly either self-inflicted, occuring in the very young from harsh handling of the penis or the introduction of articles used for purposes of masturbation, or curiosity; or follows in the adult from narrowing of the channel by the cicatricial contracture of stricture, and sometimes quite severe hemorrhages follow the introduction of sounds or exploratory instruments, even when the greatest gentleness is observed. Again, in many cases of stricture the hemorrhage takes place before the introduction of any instrument and is, whether it be little or great, the source of the seeking of surgical advice.

4. 4/1/08. J. E. B., 66 years old, a strong and healthy man, had two months ago an alarming hemorrhage from the urethra, following urination, but without any antecedent symptoms. He consulted a surgeon who catheterized him, gave deep urethral instillations, assured him that his trouble was an enlarged prostate, and prepared to operate upon him therefor. Lack of confidence in his adviser, brought him to me. I found a stricture 18 F., at the meatus, and a much tighter one, 14 F., 12 cm. from the meatus, which bled as the searcher passed through it. The prostate and vesicles were abnormally small and soft, through the rectum. There was no residual urine. The strictures were cut freely, by internal urethrotomy and through an in-

cision made at the apex of the prostate, for drainage and exploration, by touch and by sight, the prostate and vesical neck were found to be entirely healthy.

5. 1/10/08. C. W. S., mining broker. Has recently noticed loss of sexual desire and has some blood in the urine; urinary frequency, diurnal 7-8, nocturnal 3-5; has been in habit of withdrawal or using a rubber condom in coitus; has tight multiple urethral strictures, 16 to 22 F., in anterior urethra, which bleed freely upon being disturbed with anything. Gradual dilation, and the application of 25% solution of silver nitrate through a small endoscope, overcame the hemorrhage, and has restored his waning sexual power.

It is not necessary to dwell upon the hemorrhage in the acute stage of gonorrhea; or in rupture of the anterior urethra; as the source of the blood in the urine is obvious in these cases. Growths within the urethral canal are nearly always warty or polypoid; either may bleed freely at times; and the locating of the resulting hematuria, without optical search of the channel, may be quite puzzling, for, if it be free, it may be sufficient to color the urine in all three glasses.

6. 2/16/08. C. A. B., capitalist, 36 years old, has morning drop and occasional bloody urine. He has had several sharp attacks of hematuria, blood being present at the start, during, and after the finish, of the act. He was supposed to have a growth at the vesical outlet. Examination with the urethroscope discovered the presence of a small polypus just in front of the triangular ligament. This disappeared after several cauterizations with 25% solution of silver nitrate.

Tuberculous ulceration must be taken into account in estimating the probable cause of the presence of blood in the first flow of urine. The diagnosis is commonly easily made by the fact that such disease almost never stands alone, but is a sequel to a long advanced tuberculous disease of the urinogenital tract higher up.

If the blood comes from some trouble in the urethra posterior to what is called the cut-off muscle, in the absence of an unduly large or congested verumontanum, or of an inflammation of the prostate with its accompanying pain, some of it finding its way into the bladder, renders an opinion of its origin uncertain. An expression often heard in diagnosing the source of a hematuria is, "it comes somewhere from the neck of the bladder." That somewhere may be: anywhere in the urethra posterior to the deep transverse perineal muscles; in the substance of the prostate; within the drawstring of the mucous membrane covering the muscular tissue of the inner sphincter of the bladder; or in the mucous membrane of the bladder, and within 6 cm of its outlet. Such hemorrhages may be painful. Whenever the basis of their cause is an acute inflammatory condition they are painful; sometimes excessively so as is illustrated in acute gonorrheal affections of this region, in tuberculous ulceration, and in calculus impacted within the entrance of the urethra, or lying in the trigone. In confirmed masturbation, or in those subject to any prolonged irritation that occasions rapidly repeated congestion of the sexual centers, an enlargement and permanent congestion of the caput gallinaginas takes place. This slows and obstructs the flow of urine, and the spasms induced by efforts to expel the last few drops often give rise to noticeable hemorrhage at the end of micturation; and from continuance of the hemorrhage in the intervals, the blood may flow back into the bladder, and also clot in a long plug in the urethra, giving rise exactly to the phenomenon of fish-worm clotting one sees so often in hematuria from a renal source. A feeling at the end of urination of "something in the urethra like a cork," and a burning pain over the pubic bones is often complained of.

7. 3/27/08. W. T. C., 47 years old, grain buyer, has great urinary frequency, suffers from emissions and has at times bloody urine, the blood preceding, being mixed with and following urination. In addition there is strain, and a feeling for fifteen minutes after urination, of the presence of a body about the size of a pea in the posterior urethra.

Urethroscopic examination shows the bleeding to come from a large verumontanum which contains a tumor the size of a small pea. This I shall remove later through a perineal incision.

There is often a high grade of tenesmus in these affections of the bladder neck, and in no instance is it exemplified better than in cases of calculus in which the stone is shaped more or less like a letter L, one branch being formed in the prostatic urethra occupying and distending the vesical outlet and joined, in the sensitive trigone, by a cross branch which may be partially imbedded in the bladder wall. I have seen three cases of this kind. They all had bloody urine and led lives of continuous torture. They all leaked after the removal of the stone.

8. 8/25/07. M. C., farmer, 58 years old, patient of Dr. Garcelon. Has had severe dysuria, and at times hematuria, for several years. Recently the tenesmus has been unbearable, and the pus and blood abundant. His health has failed rapidly from pain and loss of sleep. The calculus can easily be felt with a stone sound in the prostatic urethra. 8/27 Lithotomy:—median perineal incision. The stone was large and imbedded in the left side of the prostate, and was continuous, through the neck of the bladder, with a large branch that was imbedded in the wall of the bladder on the left side of the base. It was a hard and extremely rough phosphatic calculus and was crushed and removed with difficulty. Recovery from the operation was speedy, but the full power of retention has never been restored.

Ulcerated syphilitic gummata, malignant growths, and mixed infections of the prostate, in addition to the diseases already mentioned, act as the causes of the appearance of blood in the urine. Gumma of this region are rare. I have seen two; both ran a typical course, occurred in men past the prime of life, were painless, and were accompanied by lessened sexual power, which was really the cause of the patients' anxiety. The hemorrhage was slight, but present in any specimen of urine passed until the disappearance of the lesions. Both required long use of iodine and mercury, in addition to massage and the application of silver solutions to the ulcerated prostatic urethra, through the endoscope. As an instance of mixed infection with ulceration the following case may serve to illustrate.

9. 8/17/07. J. R. S., 40, merchant, widower; sent to me by Dr. Hunter. Had gonorrhea two years ago, with extension to prostate, bladder and epididymis.

Has seen no discharge for more than a year, but the wish to marry again has made him desirous of ascertaining if the cure has been complete. A few shreds in the first glass, which contain no gonococci. Some blood and pus in the second glass. Has noticed blood in urine at times. Anterior urethra healthy; prostatic urethra congested on right side; bladder healthy. The right side of the prostate is the larger, nodular, and a fluid containing blood and pus is readily pressed out of it. The spermatozoa are motionless. Stains for the tubercle bacilli and gonococci negative.

4/14/08. I have treated him by prostatic massage, dilation of the prostatic urethra, irrigation and local applications, together with internal medicines, weekly, since last August, with improvement, the bleeding is less, the spermatozoa are now large and active, and the prostate less hard, but the infection still persists. In February for the first time we found gonococci. A culture prepared this month by Dr. Martyn shows the infection to be a mixed gonococcus and staphylococcus albus one. He shall receive the vaccine treatment.

An entirely typical example of malignant disease of the prostate as a cause of hematuria is given in the very first case cited in this paper. It is noticeable that pain was not a marked symptom in any of these cases. But the presence or absence of pain is not constant, and not to be depended upon in a differential diagnosis. Though many symptoms are common to prostatic and vesical hemorrhages it is often only after the most rigid examination of the whole urethra that the bleeding can be positively located in the bladder.

The hematuria from mechanical injury to the deep structures of the perineum, urethra, and prostate arises soon after the violence and always requires perineal section as a protection against urinary infiltration, and frequently for the control of the hemorrhage.

10. 3/14/03. M. W., 73 years old. Five days ago in stepping out of a buggy he fell astride of the wheel. He was instantly seized with a desire to urinate, but could not. He was taken home and his physician passed a catherer without great difficulty, and succeeded in doing so the following day but with great difficulty. The urine was very bloody. This catheter was left in position for two days, but becoming filled with clots it had to be removed and then could not be replaced. When he was brought to me no urine had passed for 36 hours. A slight amount of blood was present continuously at the meatus. Perineal section disclosed a complete fracture of the urethra. The distal end was found 6 cm. posterior to the anterior. The bladder was evacuated of blood and clots and the two torn ends of the urethra trimmed and united on the roof with fine catgut. Uneventful recovery.

The most common cause of vesical hematuria is the congestion accompanying simple vesical inflammation, cystitis, more especially cystitis of the trigone. The causative influence of the cystitis may be the gonococcus, in which case the bladder will eventually be the seat of many patches of intense inflammation and sometimes of ulceration; the colon bacillus; the pus producing cocci; the typhoid bacillus; or the bacillus-ærocapsulatus. Once in a while the pathological change noticed will be a velvety edema of the interureteral fold, and all, or a portion, of the mucous membrane about the vesical outlet. This is due to the interference with the venous circulation, and is particularly prone to occur in women who have displacements of the uterus. As an example I cite the following case:

11. 1/7/08. Mrs. S. S., 58 years old, came to me with diagnosis of stone or tuberculosis; has excessive urinary frequency with pain, which commenced about three years ago, and has progressively become worse, until it is now every fifteen minutes during the day, and hourly at night. The urine is frequently bloody. She has prolapsus of the uterus, a large cystocele, and a rectocele. No ulcer or growth in urethra. Cystoscopic examination:—no stone, growth, or ulcer; but an intense cystitis with edema, most marked on the right side. Urine alkaline, contains blood, pus, and bacteria. Total solids 8 grammes for the 24 hours. Under spinal anesthesia we amputated the cervix, repaired the perineum, and raised the bladder base. 3/30. The bladder will now hold from 90 to 150 cc without pain.

All of these cases are painful, and all are of everyday occurrence and easily detected by the cystoscope.

There is, however, another condition which occasions much vesical irritation, frequency of urination, and sometimes hematuria, but not often any definite pain:—in this the capillaries of the posterior slope of the bladder, from the vesical outlet to the ureteral openings, become greatly dilated and increased in number, veritable masses of blood vessels that look like the fine red mosses of the sea, when viewed through the clear liquid in the bladder. I have never yet been able to satisfy myself as to the cause which works to produce this telangiectasic condition, or to devise a method for its cure.

Tuberculous ulcers of this region frequently occasion severe hemorrhages, and, as in the case of ulcerations from other causes, microscopic investigations will discover blood in the urine so long as they are unhealed. In the acute genito-urinary tuberculosis which one sees often enough attaching itself upon a subacute or chronic gonorrhea in young men between 15 and 25, the hemorrhages from these tuberculous ulcers of the trigone and vesical outlet are peculiarly distressing, alarming, and depressing. The urine is expelled every few minutes with spasmodic contracture of the abdominal muscles and intense pain, blood comes in it and blood comes after it. The sick man becomes so absorbed in the presence of the blood, and so horror stricken by it, that he forgets all of the other symptoms and begs only to be relieved of the hemorrhage.

12. 3/12/1898. Wm. V., aged 19 years, single. Contracted gonorrhea two years ago from which he has never recovered. He has had great urinary frequency for a year, together with hematuria. Urination takes place every 15 minutes; clots are passed with the urine, and fluid blood follows it each time; the pain attending the act is atrocious. He is emaciated, pale and feeble. The treatment he has received has been barbarous, consisting of distention of his bladder by strong solutions under high pressure and the passage of large sounds. The urine contains gonococci and tubercle bacilli. The prostate and seminal vesicles contain tuberculous nodules. His bladder capacity, under chloroform, is 120 cc. Numerous tuberculous ulcers could be seen with the cystoscope on the fundus and in the

trigone. By appropriate treatment this boy improved so much that he was apparently well by September of the same year. In December he contracted gonorrhea a second time. This extended promptly to his bladder, giving the excuse for a fresh outbreak of his tuberculosis; terrific hemorrhages followed. Later he was attacked by tuberculous meningitis from which he died in March of the following year. His chief complaint was always the hematuria.

In dilating strictures, and in stretching the urethra for the better attack upon chronic purulent infections of its glands, many make the mistake of depressing the handle of the instrument well down between the thighs, thus bringing its point violently against the vault of the bladder, and producing bruises or abrasions which afterward form ulcers, and become the seat of tuberculous infection. I have seen many such cases and when present they are naturally always accompanied by the presence of blood in the urine.

13. 8/7/1893, J. T. C., 27 years old, coachman. An attack of gonorrhea in 1891 was followed by spasmodic stricture. Following exposure to rain and cold came a cystitis which was treated by sounds and severe injections, at the hands of an incompetent. Present frequency, every twenty minutes; bladder capacity 40 cc. Urine always bloody. It was the habit of the operator to force the sound in, depress the handle between the thighs and keep the instrument there for five or ten minutes each day. I put his bladder at rest, and, after the subsidence of the very acute symptoms, a cystoscopic examination was made. There were three large ulcers on the vault, where the point of the sounds introduced in the manner described would naturally touch; originally traumatic, they had become tuberculous. There were many miliary tubercles to be seen in the bladder. The man eventually was cured, under appropriate medical, and surgical, treatment.

In old men who suffer difficulty in urination from an obstruction due to an encroachment of a growth in the prostate pressing upon the canal, hematuria is a very frequent symptom. It may come from simple congestion, the hemorrhage arising by the breaking of an enlarged blood vessel by muscular strain or by pressure; or it may be primarily induced by clumsy or unfortunate efforts at catheterization; or by the violence occasioned by the efforts to expel hard fecal masses from a distended rectum. While the presence of hemorrhage, in a case of enlarged prostate, is by no means to be interpreted as a sign of malignant degeneration of the gland, yet it may always give occasion for thought. It is often severe and long lasting when due to an ulcerated surface occasioned by muscular force applied at intervals to some boss or lobe protruding into the urethra, or projecting upon a pedicle into the bladder.

14. 9/18/07. H. B. S., 78 years old, college professor. Has had urinary frequency and obstruction for several years; ill and confined to bed for two months. Urine, blood stained; tenesmus extreme; hemorrhage at times very severe. 10/14, cystoscopic examination shows a pedicled tumor, ulcerated and bleeding, projecting from the left side of the prostate, into the bladder. 10/15, perineal prostatectomy and removal of growth. Miscroscopical examination by Dr. Black demonstrated it to be a simple adenoma which had undergone inflammatory changes. Perfect recovery of bladder function.

The most natural place to discuss hematuria due to the presence of stone in the bladder is in juxtaposition to that following tuberculosis, for the latter mimics the former, in all of its symptoms, so closely that many a man has been, where dependence has been placed upon the classical symptoms, cut open for a calculus that did not exist. Of course the two conditions may exist together, which is doubly distressing.

I have seen vesical stones, almost pure urates, so smooth that I can conceive how they might lie in a healthy bladder for a long time, and gradually increase in size, without causing cystitis or hematuria. But in an experience of about 150 vesical calculi I have in each case found blood present in the urine, but not by any means always in quantities that could be recognized by the naked eye. But to be sure of the presence of stone one must either strike it with the searcher, see it with the cystoscope or grasp it bimanually.

In the absence of Bilharzia and hemophilia about the only other cause of hemorrhages from the bladder is a new growth, either malignant or non-malignant, and the difference is often difficult of distinction; for all tumors occuring in the bladder are, however innocent they may appear, under the ban of suspicion.

In a papilloma the bleeding is usually symptomless. In a carcinoma or epithelioma it may be painless or painful, according to the amount of infiltration and stiffness of the detrusor, and of the presence or absence of ulceration and vesical infection. In either case the hemorrhage is apt to follow compression or tearing of the tumor by forcible contraction of the muscles of the abdomen upon the bladder, that viscus being partially filled with urine, and the muscular effort being great; usually in the effort to avoid a blow or jolt or a fall. After an interval of rest the hemorrhage may subside entirely and the case remain symptomless for years and then another and freer hemorrhage take place.

15. 3/14/06. G. R. C., 60 years old, speculator. Four years previously he had a severe hematuria which lasted two weeks. In February of this year he helped lift a heavy loaded wagon from a rut where it was mired, and immediately afterward passed a large quantity of bloody urine. This also subsided under rest, and the use of ergot and hammamelis. He consented to a cystoscopic examination, at which time a large and long-pedicled papilloma was found. Operation at the time was refused, but later requested, during an intense hemorrhage in June of the same year; this also followed great exertion. The tumor was removed by excision through a supra-pubic wound. The man is still alive and there has never been any more bleeding.

The painless hemorrhage of carcinoma of the bladder before infection is very well instanced in the case which follows:

16. 11/26/04. Mrs. George S., 67 years of age, patient of Dr. Follansbee. At fifty-nine had her first attack of hematuria, which was painless. After this came other hemorrhages at irregular intervals. Within the past two years any unusual exertion or even the taking of a warm bath would be followed by the appearance of blood in the urine, but there was no pain until about ten days ago. 11/23, cystoscopic examination; a large papillomatous growth with a short, broad pedicle was seen on the right

upper quadrant. 11/29, supra- pubic cystotomy; removal of the large growth and four lesser ones by excision; many smaller nodules were found and destroyed by rongeur and cautery. The large growth was a carcinoma; the lesser ones papillomata. I saw this woman in the spring of 1907; she had been very well, without hemorrhage or pain, in the interval.

But occasionally pain may be complained of from the start in carcinoma, and hemorrhage is irregular and not very great, requiring microscopical examination for its detection. I have noticed this several times where the vault of the bladder was the seat of the affection. The pain is not like that of stone and does not disappear with rest; is constant and in the same place, and is not unfrequently referred by the medical examination to adjacent organs as witness this case:

16. 3/12/08. L. A. McK., 43 years old, mining operator; referred to me by Dr. Rose Bullard. He has suffered for years with pain in the bladder and over the middle of the abdomen, chiefly on the right side. Urinary frequency has been present all of the time and has now increased until it is every fifteen minutes. The pains were referred to his appendix by a medical adviser and in November, 1906, this organ was removed but no relief followed. His urine is acid and contains pus, bacteria and a moderate quantity of blood. With a cystoscope a large growth, with a broad, flat pedicle, can be seen upon the right side of the bladder vault. Operation deferred.

In rupture of the bladder there is always hematuria. This condition is easy to surmise, as it is occasioned almost invariably by great physical violence to the pelvis, and often accompanied by fracture of the pelvic bones. The bladder is usually full at the time of the accident and its contents escape either intra- or extra-peritoneally. In either case some urine is passed from time to time or is withdrawn by a catheter. Fluid introduced will nearly always escape through the laceration. Immediate surgical measures for its treatment are imperative. The tear should be sought, without loss of time, through a supra-pubic opening, which is best made into the peritoneal cavity.

In the hypertrophied bladder of urethral obstruction, if great care is not exercised in the primary use of the catheter, irreparable damage is often done by the too rapid removal of the negative pressure from the blood vessels; the resulting hematuria may last for a very long time, or even be fatal.

Hemorrhage from the ureter: When we see blood puff forth from the mouth of a ureter, like red smoke from the stack of a locomotive, is it possible to speak confidently of the lesion which produces it as ureteral? Except in rare instances, no. This is as far as we can see. Beyond this point the best we can do is to locate a stone, by aid of the magic power of the Roentgen ray, or by the passage of wax-tipped sounds into the ureter. That there is no obstruction, can be told by the free entrance of a catheter to the pelvis of the kidney. But this does not assure us of the nonexistence of a growth, or a tuberculous ulcer, in the ureter; nor is there any essential difference between the attacks of colic induced by the passage of a slough from a tuberculous lesion, a calculus, or a blood clot large enough, or firm enough, to excite nonrhythmical contractions of the tube. Lesions of the ureter itself, a simple sewer pipe, are uncommon, and when a hemorrhage is once located as coming from either ureteral mouth, it may confidently be assumed in nearly every case that we have to deal with a diseased or injured kidney, and this brings us to the discussion of the causes of renal hematuria.

The kidney substance, lacerated or torn by force; its mucous membrane irritated or torn by the pressure of a stone; deposits of tubercle in the cortex with congestion, or in the pelvis with caseation and the formation of slough; malignant tumors infiltrating its tissues; angiomatous degeneration of a pyramid; diseases of the adrenal; displacement, a shower of uratic or oxalic crystals; papilloma, multiple cysts; echinococcus, nephritis, acute and chronic; and sometimes a trophic change, which may not be detected by the microscope, but nevertheless exists and allows the blood to drip through the tissues as water from a sponge; may be the cause of the bloody urine. To these may be added the effects of such drugs as turpentine, phenol and the Spanish fly.

Fracture of the kidney has been known to follow (1) a push or blow against the abdomen or body; the individual moving strikes against some object; or the individual being still, is struck by some moving object. The injury is usually in proportion to the force exerted, but not always. (2) By lateral pressure, the body being caught or squeezed between two opposing forces. (3) By sudden compression of the organ against the spine or ribs in the exertion of great muscular effort; as in wrestling, or severe lifting, in which the person is obliged to stoop and lift directly upward. (4) By transmitted force; the kidney being thrown suddenly, by the tensely contracted abdominal muscles and the diaphragm, against the ribs and the spine. Fortunately the kidneys are so placed and protected that this cause of hematuria does not often obtain; such injuries, according to Kuster, constituting less than 3 per cent of all surgical diseases. They are always serious injuries, and whenever hematuria follows an accident of the nature I have described, cystoscopic examination, if the source is not self-evident, should be immediately made, and the kidney at fault cut down upon and mended if possible, or removed; for if there is enough injury to cause the appearance of blood in the urine, the capsule of the kidney will also be found torn, and blood and urine will escape into the surrounding cellular tissues. Delay in such cases means long invalidism and often death.

8/10/06. Jno. M., 40 years of age, shopkeeper. Injured in a trolley wreck after which he was unconscious for two days. Bloody urine drawn by catheter soon after the accident. When he recovered consciousness he arose and walked to the toilet after which he passed a large quantity of liquid blood. 10/30, all hemorrhage had ceased, but the urine contained pus. He came under my care 11/14 with recurrent hemorrhage, chill and high temperature; thoroughly septic. I made a lumbar incision and at the bottom of a perinephic effusion of clotted blood, pus, and urine, found the kidney which was torn transversely from before backwards, a little

above the middle of the organ. The separation was almost complete, the poles were united only by the tissues of the hilum and a thin piece of the cortex. The lower fragment was split longitudinally and posteriorly, almost two-thirds of its length; and there were also several star-shaped fractures. There was no chance for a successful plastic operation, so the kidney was removed. Recovery.

An artery of considerable size may be torn, and the hemorrhage, alarming at first, may become stilled. In intervals of apparent progress to recovery, after some exertion, the thrombus may be displaced and there may be repeated hemorrhages which result in extreme debility, anemia and infection.

17. 10/20/02. J. M., farmer. Patient of Dr. Dilworth and Dr. Beckett; 38 years old; was thrown from his buggy in a runaway accident and struck his right loin against a heavy piece of wood. A few minutes afterward he was found greatly shocked, pale, collapsed and suffering exceedingly from pain in the abdomen. Two hours afterward he passed 1800 cc of bloody urine. The shock was prolonged and any exploratory operation was deferred. At the end of a week he had a second bleeding, so profuse that unconsciousness followed. A ureteral clot was again formed and so at intervals of five to seven days he had recurrent hemorrhages until December 21st, when I saw him in consultation with Drs. Dilworth and Beckett. The urine contained blood and pus and there was a marked tumor in his side. The kidney was cut down upon and found lying at the bottom of a perinephric cavity containing blood clots, pus and urine. It was torn irregularly across its body a little above the center, and standing up in the ragged tissue was a large arterial branch that had been torn squarely across by the force of the crushing blow. The reason for the relapsing hemorrhages was plain. At intervals the clot in this vessel would become dislodged by some muscular exertion following the accumulation of a little strength. Even as we examined it the clot was forced out and it commenced to spurt. We ligated it, freshened the torn edges of the kidney and brought them together with a few cat-gut stitches, thinking we might save the kidney. The wound was drained but infection was too great and on January 19th Dr. Beckett removed the kidney. Recovery complete and uneventful.

Hemorrhage from the kidney may be painful or painless. Renal calculus is commonly painful, but not necessarily so. Uratic stones are sometimes so smooth that they may be in the kidney a lifetime and give rise to neither pain nor bloody urine, unless ascending infection from the bladder, or tuberculosis, attacks the kidney, or the stone, being small, engages in the infundibulum of the ureter, produces congestive contractions, and ruptures some small bloodvessel. But stone in the kidney is often accompanied by atrocious pain; and if rough or branched, blood may be found by microscopic search at all times; while after muscular exertion, profuse hemorrhage takes place; this is more particularly the case in the presence of oxalate stones, the crystals of which, set at irregular angles, are as sharp as glass.

To establish a diagnosis, resort should always be had to a skiagraph of the kidney and ureter upon the side painfully disturbed. But even when once obtained full reliance may not be placed upon the shadow, for sometimes this agent is tricky, showing stones where none exist. The following case illustrates the point well, while also it may be used to illustrate the hemorrhage of malignant tumors of the kidney.

18. 12/7/07. M. J. S., 49 years of age; miner; patient of Dr. Baylis. Two years ago after lifting a heavy weight a free and painless hematuria appeared. This disappeared after a period of rest. At various times since the hemorrhage has been repeated. Painless at the outset, after a few hours it is always followed by an intense right-sided renal colic, which lasts from three to ten days. During the past six months the intervals have lessened and the amount of blood lost has been greater. No pain in the bladder and no increased frequency of urination. An inspection of the interior of the bladder shows it to be a healthy viscus and both ureteral openings to be of normal size and appearance. Urine obtained from the right ureter contains some blood and pus but no other cells, casts, or organisms. A suggestion of exploration of the right kidney was declined. January 9th hemorrhage repeated. From the character of each hemorrhage at its onset I told him I believed his trouble to be a papilloma, probably non-malignant, projecting into the pelvic of the kidney, the pain being caused by the subsequent pressure of the clotted blood. We had a skiagraph taken, which is presented herewith, and from it the diagnosis of stone was made. The picture shows four shadows, two in the kidney and two in the ureter. January 16th, nephrectomy through an Abbe incision; exploration of the ureter being deemed necessary. As soon as I seized the kidney I found I was dealing with a malignant growth and removed it entire. There was no stone in the kidney substance and none in the ureter. What caused the shadows? I do not know. The tumor is a misplaced adrenal which had grown through the lower pole of the kidney, from the outer side, penetrating the pelvis, and there forming a soft polyp, practically a papilloma, which was the source of the blood in the urine. Recovery was prompt and perfect. This brings me to a case of malignant renal growth which was believed to be pyelitis occasioned by calculus.

19. 2/10/07. E. E. N., 36 years old; bank cashier. Patient of Dr. Hamman. For three years he has had dull pain in the left loin which at intervals became colicky, and was accompanied by blood in the urine. He has never sought medical aid but once, and then he was told that his trouble was kidney stone. For several weeks he has been unable to work, has had temperature, chills, blood in the urine in small quantities, and during the past few days some pus. The whole of the left side of the abdomen, and about one-third of the right side, is occupied by a tumor which makes these tissues and those in the loin bulge like a drum head; the superficial veins over its whole surface are enlarged from the interference with the circulation by its pressure; its bulk, interfering with the play of the diaphragm, has increased the respiratory rhythm to 30 per minute; he suffers from colic, by the interference of the tumor with free exit of gas from the intestines, and has not had a passage from the bowels for a week despite the administration of severe cathartics. He is emaciated from inability to take food. The tumor examined bimanually seems to fluctuate. He was believed to have a great abscess of the kidney from the ureter being obstructed by a stone, or a malignant growth, perhaps both, with the preponderant history in favor of stone. The kidney was cut into by a free straight incision in the back. It was adherent to the muscle plane. When the capsule was cut through and a pair of forceps preceding the exploring finger was pushed deep into the kidney substance the blood spurted forth like water from an artesian well. I thrust my finger down into the pelvis of the kidney seeking the stone and the pus, but there was none there. The tissue

was as friable as rotten sponge and broke into masses in all directions. It was sarcomatous. I packed the wound and left everything open the better to relieve tension. After the operation the breathing became of normal frequency, gas was passed, the bowels moved in a few hours and all pain ceased. When the great tension was relieved it was noticed that the lymphatics in the skin of the abdomen and in the groin on the left side were enlarged. He was given Coleys fluid for about four months. The tumor and the swollen glands disappeared and the following September his physician reported him to me as well and working at his desk in the bank.

Case reports are made from time to time of persistent one-sided hematuria in which, after the splitting of the kidney in situ, or its removal, no definite pathological change in its tissue can be noted. I have recorded an instance of such indefinite trophic change elsewhere, and have referred to the same case earlier in this article.

Fenwick has called attention to another strange change in a limited portion of the kidney structure, which, easily overlooked by the uninstructed, provokes serious hemorrhage, and is readily cured without removal of the kidney. I refer to angiomatous changes in one of the papillæ.

19. 1/29/07. O. A. C., 45 years old; printer; patient of Dr. Hamman. Two weeks since he was attacked with a symptomless hematuria, which has been continuous and extremely severe. Cystoscopic examination shows a healthy bladder, and the emission of blood from the left ureter. January 21st, examination of the kidney and ureter through an S shaped incision in the loin. As no clots could be seen coming down the ureter when it was rolled up on the peritoneum, it was opened and explored toward the bladder, while a small silk catheter was passed up to the pelvis of the kidney. No obstruction was felt in the pelvic part of the ureter and the water used to flush the tube was not stained with blood as it issued from a catheter in the bladder. A very few drops of blood came from the catheter in the kidney. The kidney was brought out upon the side, split open from pole to pole and the entire pelvis and each calyx with its pyramids examined closely. Everything was normal except a portion of one papilla in the upper pole, this was dark purple in color and bled continuously. It was removed by a wedge shaped incision, the sides were united by one stitch of fine cat-gut. The incision in the ureter was closed over a catheter which was withdrawn through the pelvis of the kidney. The mucous membrane of the pelvis was approximated by a few fine interrupted cat-gut sutures, and the two sides of the kidney brought together with a double row of mattress sutures tied loosely, and the wound drained by two ample cigarette drains, which were withdrawn in two and four days respectively. Recovery, uneventful and complete. No hematuria since.

Tuberculosis of the kidney is frequently the cause of hematuria of varying grades, depending upon the amount of tissue involved, the stage of the disease, whether miliary or caseating, and in the latter case upon the progress and situation of the ulcerating surface. In the hemorrhage which occasionally accompanies a thickly sown eruption of miliary tubercles in the cortex, the hemorrhage of congestion, pus has preceded its advent for some time, and the pain is only a dull ache in the back. Where a caseating nodule or gumma breaks down and erodes a fair-sized blood vessel, the hemorrhage is frequently great and prolonged, but is rarely or never painless, for the clots and sloughs obstructing the ureter give rise very quickly to attacks of kidney colic. But in cases of long standing though symptomless tuberculosis of the kidney with palpable tumor, we see, rarely enough, a painless and abundant hematuria which arises from a fine granulomatous growth, gelatinous, really polypoid, which fills the pelvis of the diseased organ like moss.

20. 3/7/03. F. N., merchant, 36 years old; patient of Dr. Moseley. He is of good antecedents and without any history of tuberculosis. In the summer of 1899 his horse fell upon him, and the horn of the saddle struck him over the left kidney. Immediately afterward he passed blood with the urine and has done so at intervals ever since. Often the urine would be clear for a few days and then a free hemorrhage would take place, this would gradually subside, there would be another interval without blood, and then the hematuria again. He has become very anemic, and lost thirty pounds in weight and is feeble. On February 28th of this year there was an alarming hemorrhage accompanied by much pain and a rise of temperature, and a tumor could be felt in the left loin. Cystoscopic examination shows a healthy bladder. Blood stained urine issues from the left ureter. Urine acid, contains some pus, and blood; but no tubercle bacilli. March 13/03. nephrectomy. The kidney was very large and adherent. It was tuberculous and filled with large cascating masses; its pelvis which was greatly enlarged, was filled with a large gelatinous mass of small polypoid growths from which the hemorrhages came.

The history is clear: injury, bruising of the cortex, a tear in the mucous membrane of the pelvis, formation of granulation tissue, polypoid growths, which, easily lacerated, bled easily and frequently; deposit of tubercle bacilli in the injured kidney tissue; formation of tuberculosis foci, caseation, chronic inflammation and adhesions. He was entirely well for two months and has remained well ever since.

Multiple cystic kidney is looked upon as such a hopeless disease that the advice is given always to let it alone, and as I can find no record of hematuria being one of its salient symptoms I report the following case.

21. 9/12/07. J. B., farmer, 63 years old; patient of Dr. Bacon. Has kidney cachexia. He has been very ill for a month and running temperature from 100° f. to 104° f; has attacks of pyuria and hermaturia. Both kidneys are enlarged, the left occupies all of that side of the body, and a little more, and is very tender and tense. The right kidney is enlarged and not tender; breathing and bowel movements interfered with by pressure. Twenty years ago, four years ago, and one year since he had similar attacks, in which there was blood in the urine. Cystoscopic examination with catheterization of both ureters. Bladder healthy, both ureteral openings enlarged but neither ulcerated. Urine from right kidney acid, specific gravity 1020, a few pus corpuscles, and a very few red blood cells present. The left kidney secreted nothing. I made a diagnosis of probable bilateral malignant disease.

October 13th, through a long anterior incision the kidney was exposed and found to be a multilocular cyst. All of the cysts that could be reached through the incision were opened and the division walls removed with scissors. Most of them contained clear, some bloody, and some purulent fluid. The pelvis of the organ was greatly dilated and was full of

very thin pus. There was but little bleeding. The pressure was greatly relieved, and pain, temperature, and asthmatic symptoms, ceased immediately. The swelling of the right kidney disappeared and after great trouble, for he was very feeble, the wound healed, without suppuration. He made a good recovery and is apparently well, at least well enough to get some pleasures out of living and to transact business.

In dislocated or movable kidney abundant hemorrhage occurs, from time to time, and is usually painless, and probably induced by pressure congestion, from obstructed circulation.

22. 2/19/08. Mrs. D. H. W., 39 years old; patient of Dr. Sheppard. Has had painless hematuria for two weeks without great urinary frequency. She has pain in the back which is worse in the left side. There are no other subjective symptoms. Both kidneys are enlarged and both displaced; the right is a true floating kidney. Cystoscopic examination:—urethra and bladder healthy, blood to be seen issuing in steady regular jets from the right ureter. Operation deferred.

Echinococcus is said by some to be a cause of renal hemorrhage. I have never met a case, but one would think that in the microscopic examination of the urine the hooks would be surely found at one time or another. Nephritis, too, either acute or chronic, frequently is the cause of hematuria. But in chronic nephritis, even if it be one-sided, there is the albumen, which is present after the precipitation and removal of the blood; there are the casts in the intervals of the hemorrhages; and also the cardiac and stomachic symptoms to aid in diagnosis. Still there are some cases of chronic Bright's, in which one-sided, persistent and depleting hemorrhages have been reported which must be very puzzling. It is to be recollected, however, that surgical interference, at least so far as the relief of tension by splitting the capsule, can do nothing but good. I have thus endeavored to present to you the subject of hematuria, illustrated by cases which have been interesting to me, and which have helped teach me the complications of a subject simple in itself but very diversified as to its anatomical origin and histological causes.

In the treatment of this symptom, usually surgical measures are to be employed. But even so, to gain time, the use of epinephrin, ergot and hammamelis, morphia when needed, a bland diet, and above all, rest, are not to be overlooked. Absolute forbiddance of all alcoholic stimulants is necessary.

Discussion.

Dr. H. C. Moffitt, San Francisco: Dr. MacGowan has covered the subject so fully that there remains very little for me to discuss. In my work it is natural for me to come across renal hematurias resulting from tuberculosis, stone or new growth. I would emphasize that with regard to the new growth the Grawitz tumor seems very common in California, the next commonest place to its occurrence in Vienna. A very long silent period may come after the initial hemorrhage in the new growth. I remember a young man whom I saw some years ago who had had his first hemorrhage four years before any serious symptom attracted attention to the kidney. It is well to remember that hemorrhage of hypernephroma may be profuse. I remember a case in which the later hemorrhage was so profuse as to lead to a diagnosis of aneurism of the renal artery. These hemorrhages, although profuse, may stop absolutely. I have in mind a case of Grawitz tumor with hemorrhages recurring frequently, particularly after exhaustion or indulgence in an undue amount of beer. Between these hemorrhages the urine was free from any macroscopic blood. Some weeks ago a man came into the hospital with a history of spitting blood. He had a tubercular reaction and deformity of the spine and an unusually lumpy tumor in the abdomen. The whole condition was regarded as tuberculous until the history of hematuria called more attention to the kidney. The diagnosis of Grawitz tumor was confirmed by autopsy. It has not always seemed easy to me to tell the hemorrhage that comes in certain cases of nephritis, particularly in old men, from a complication with renal stone. Of course the history helps out in our judgment. A continued examination of the urine will help us in our diagnosis, as there are cases of nephritis in which hemorrhage is a recurrent symptom. These cases have been emphasized by Askanazy. It is not always easy at the bedside to trace the source of a few red blood cells which appear in the urine. It seems well to remember that any acute abdominal pain may give rise to no symptoms except a severe intermittent pain in the lumbar region. Almost constantly there were red blood cells present. I have in mind another case of a child in which there was a large irregular tumor of the left lumbar region which seemed definitely to be a kidney tumor. Even without the severe attacks of pain the red blood cells were found frequently in this urine. A diagnosis of renal sarcoma was made until the increasing irregularity of the tumor and occurrence of symptoms elsewhere led to a readjustment of the opinion and a diagnosis was made of tuberculous glands in the abdomen. I have in mind a large tumor of the right lumbar region in which a diagnosis seemed perfectly plain of a large renal tumor. The ordinary methods of diagnosis were applied and seemed to prove. There were constantly red blood cells in the urine, but abdominal section showed no tumor of the kidney but a retroperitoneal tumor. Not only are we going to make the diagnosis with the help of catherization of each kidney and the cystoscope and the X-ray, but we must bear in mind the general aspect of the case. Unless we take a whole clinical picture we are going to be led astray by the hematuria as we are by other symptoms which seem to be perfectly definite.

Dr. W. W. Beckett, Los Angeles: I have not much to say on this very important subject, but I want to thank Dr. MacGowan for his exhaustive paper. This is a branch of medicine somewhat out of my line, but the diagnosis, as in other cases along the urinary tract, is so important that unless it is a very simple case I usually send them to Dr. MacGowan. Those cases where there is a prolapse of the bladder are very frequently benefited and cured by anterior colporrhaphy. Another condition which I think the doctor did not mention is that of slight hemorrhage coming from caruncles within the uretha. Hemorrhage coming from the kidney, as Dr. MacGowan mentioned in the trauma case, was exceedingly interesting. That case went along about two months before removing the kidney, and several times the patient was aparently well and there was no blood in the urine whatever. At the first operation the kidney seemed to be in good condition. At the second operation the vessels leading up into the kidney were entirely occluded, and while the kidney had not sloughed the circulation was entirely cut off from the renal substance.

Dr. W. F. B. Wakefield, San Francisco: My experience with hematuria has been somewhat limited. There are two things which have impressed me in

the study of ten or twelve cases, and those were the relative frequency of a tuberculosis of the kidney and the relative frequency of the condition of which Dr. Moffitt spoke—the Grawitz tumor. It seems to me that tuberculosis of the kidney is much more frequent that usually supposed and that the symptoms are misleading on account of its being somewhat difficult to demonstrate the tubercle bacilli in the urine. I am quite impressed with the opinion that tuberculosis of the kidney is a relatively frequent condition and much more frequent that we generally deem it to be. Oftentimes rather slight symptoms will point to a tuberculosis of the kidney where the bleeding is relatively very limited. On the other hand sometimes we will have enormous hemorrhages from a kidney with practically no symptoms at all. Very recently a case passed into my hands which surprised me by the amount of blood that was lost, with absolutely no other symptoms. The urine, however, was loaded with tubercle bacilli. Why hypernephroma should be rather frequent in California I do not know, but there are few of us who have had experience with abdominal surgery who have not met one or two of these cases. Yet one would judge that the Grawitz was a comparatively rare condition. In San Francisco so many have come before my notice that it does seem as Dr. Moffitt has suggested that here it is a relatively frequent condition.

Dr. MacLaughlin, Pasadena: I have had some experience the last year which has led me to recognize the difficulty offered in interpreting the meaning of hematuria which should be regarded as a symptom. I think in every case of hematuria it is very important and we must regard it purely as a symptom and that the clearing up of the diagnosis sometimes requires a great deal of work. I am sorry to say that very little of this work has been done by the average general practitioner. Recently I had a case of a woman with hematuria who had been advised by four doctors to have the kidney removed. On cystoscopic examination the bladder was found to be normal and upon catheterization normal urine was found to be coming from the side supposed to have tuberculous kidney, and bloody urine and pus coming from the opposite side. This proved to be a stone on the side opposite to that where the tumor was supposed to be. I could report two more cases in which the operation was finally done on the side opposite to that supposed to have the trouble. Another point in these cases is the importance of rest. I had a man from a mining camp who had been injured with a large chunk of coal on the left side, with an immediately following hematuria. This persisted for three months in spite of all treatment. He passed large quantities of blood, in fact so much that he was anemic. There were no other symptoms and no pain. I did nothing for him except to order rest in bed, and in three weeks his hematuria had completely disappeared. Another class of cases are those of stone. Frequently we hear of a kidney lesion simulating a stone with hematuria. I do not hear so much about it now. That is simply because the great majority of these cases can be cleared up by frequent microscopic examination and X-ray pictures. Ninety-nine out of every one hundred cases where we get hemorrhages simulating stone in the kidney, it is actually stone. I had three cases recently in the hospital, all of whom had blood in the urine and all were supposed to have stone in the kidney, but all cleared up in a very short time. However, in every one I succeeded in finding a small calculus which was passed while the patient was under my observation. A great many of these cases are due to a sudden passing of a stone while the patient is under observation. Careful observation should be made of the urine in every case of hematuria.

PENTOSES. *

By MR. A. HALDEN JONES, Los Angeles.

Pentoses occur in nature in many fruits, e. g., cherries, plums, huckleberries; in vegetable gums, as gum arabic or gum acacia, in cherry gum, also beet gum from our sugar beet. Here they exist as pentasones which are polysaccharides, for the five carbon sugars as starch is for the six carbon sugars. Pentoses occur in marine plants; they have been found in several varieties of seaweed. The lignin test, which is used by botanists to demonstrate the site of wood-formation in the growing plant depends upon the presence of wood sugar which is a pentose. Pentoses also occur in the nucleic acids of many plants—in fact, the yeast plant furnishes a convenient source of nucleic acid.

In the animal body many nucleic acids containing pentose radicals lie in close relation to the process of life. You will remember that the nuclein of the physiological chemist is the same as the chromatin of the histologist. Such nucleic acids have been demonstrated in the pancreas, liver, spleen, thyroid and brain; also, in the head of the spermatozon.

From the standpoint of pathology, pentoses sometimes are of considerable importance. Some sarcomata possess a high pentose content. And again, we find cases of chronic pentosuria. This condition persists on a pentose free diet. Pentosuria is not of grave clinical significance, yet if it is mistaken for diabetes mellitus it may be the cause of much needless worry and trouble to the patient. And, moreover, the diabetic diet does not influence the amount of pentose excreted. The observation has been made repeatedly (Sahli) that such cases are injured by the strict dietary of the more grave disease. In such cases, as those just cited, chronic pentosuria and malignant tumors, the five carbon sugars must be a product of metabolism. Whether this is a product of perverted metabolic or enzymic activity, or whether it is an exaggeration of the process which provides normally the pentose for nucleic acid, is a matter of conjecture.

When fruits containing pentose are ingested a temporary pentosuria, and so-called alimentary pentosuria, readily is obtained. The amount of pentose excreted bears a direct relation, of course, to the amount ingested. Not all of it is excreted. When ingested pure, these sugars pass the easist of all into the urine. And in the case of xylose, may be demonstrated after the ingestion of only 0.05 grm. (Emerson.)

Several questions arise concerning the role of pentoses in plant and animal physiology. Some of these questions may be mentioned here: First, why does the plant store pentoses in the fruit? Is it for the growing embryo? Why does the plant use pentose in preparing lignin, its so-called skeleton—even in the maple tree, which certainly has plenty of other sugars available? In the case of the

* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

animal organism on a pentose free diet, what is the source of the nucleic acid pentose, etc. Also, can the animal organism use pentoses for glycogen formation the same as it does other carbon sugars? And, is the old rule true, which states that only sugars containing three atoms of carbon or some multiple of three can function in glycogen formation? This is the question we are considering today.

To test this point, pure arabinose was prepared from gum arabic. The experimental animals used were chickens, twenty-four hours old. The glycogen estimation was done according to the method of Dr. Pflugger. After inversion of the glycogen, the resulting dextrose was calculated quantitatively by the use of the cyanide process, as modified by Dr. Stookey.

In the first set of chickens, fifteen twenty-four-hour old chicks were used. Four were used as controls. These proved to be glycogen-free, this agreeing with the observations of Pflugger.

The others were fed the pure pentose in amounts varying from one to three grammes. Six were killed six hours after feeding; three were fed several times and killed twenty-four hours after the first feeding. Two died soon after being fed. In none was there any evidence of glycogen formation. One of the forty-eight-hour chickens gave a slight reduction of copper, but from this no conclusion could be drawn, all the others being negative.

These results were unsatisfactory in some respects. Of course, the hepatic cells of the chickens were not used to forming glycogen, and it was thought possible that a different result might follow if the pentoses were furnished to hepatic cells in the habit of forming glycogen. Some of the chickens had a diarrhea soon after feeding; the quantities worked with were very small, the heaviest liver weighing 1500 mg.

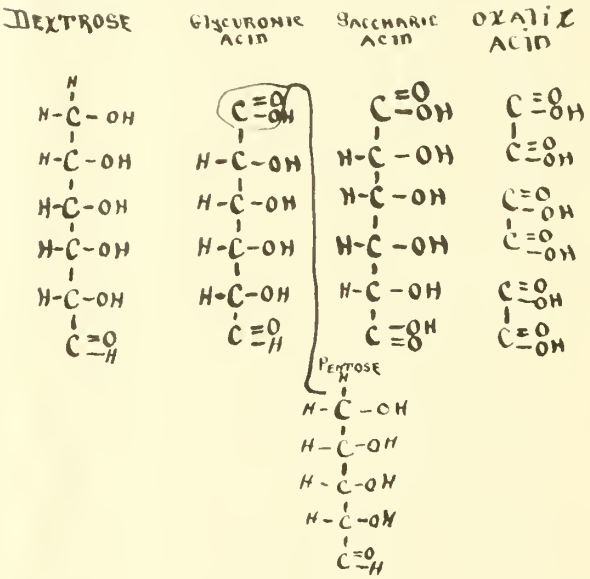
In another series half-grown chickens were used. These were rendered practically glycogen free by starving in a refrigerator. They were then fed pure pentose in quantities of six to eight grammes. The livers of these gave no more reduction of copper than the livers of controls killed before the injection of pentose.

Concerning the origin of pentose in the animal organism on a pentose-free diet, the following suggestion is offered as an explanation:

The chart gives what are undoubtedly some of the intermediary products in the oxidation of dextrose to carbon dioxide and water. You will notice that the first oxidation gives glycuronic acid. Now, if from glycuronic acid CO_2 be removed, pentose results, as you may see. Such a removal of CO_2 from the molecule is paralleled by the process which gives rise to the two ptomaines, cadaverin and putrescin, from lysin and ornithin. This occurs outside of the body in substances like fish ova and sperm, which contain large amounts of the hexon bases (lysin and ornithin). This explains the cases of ptomaine poisoning after eating fish which have been canned without the removal of the sperm ova. This takes place in the body in the rare condition known as diaminuria, cadaverin and putrescin occurring in the urine.

The results obtained in this series of experimental animals are not considered final. The study will be continued, using a larger number of animals and the conditions varied to meet the indications as now seen.

You may ask, "Is there any comparison between the amount of work involved on the part of the hepatic cells in converting a five-carbon sugar into glycogen and that involved in converting the substances which are known to be precursors of glycogen." Some of these precursors are the monosaccharides, dextrose, levulose and galactose; the disaccharides, maltose, lactose and saccharose; the polysaccharides, starch, dextrin, etc. The latter can function as glycogen formers only after being hydrolyzed to monosaccharides in the alimentary canal. Glycerin is a three-carbon compound. According to the work of Cremer this can function and a sugar and glycogen form. And only through glycerin can



fat influence, directly, glycogen formation. Concerning the ability of proteid to affect glycogen formation, opinions vary. Most investigators agree that those proteids giving the alpha naphthol test, i. e., those containing a carbohydrate radical may directly influence glycogen formation. Yet feeding glucosamin the carbohydrate radical has given slight or no results. And on the other hand, Dr. Stookey feeding pure casein obtained positive results. Many other cleavage products of proteid have been fed. The results have been positive and negative with no definite rule. Einden with alanin obtained positive results. In feeding some of the cleavage products a factor of error is confronted on account of the gastro-intestinal irritation and consequent interference with absorption. This was marked with arabinose.

In conclusion, we may say that the hepatic cells which are able to swing the six carbon levorotatory ketose, laevulose to the dextrorotatory glycogen which on cleavage yields only aldose, that these cells seem to be unable to use the five carbon chain to form reserve carbohydrate.

POSTOPERATIVE TREATMENT.*

By O. D. HAMLIN, M. D., Oakland.

In considering postoperative treatment, we must necessarily consider the proper preparation of patients for surgical operation, as it has a very important bearing on the postoperative condition. The rationale of preparatory treatment is based upon the principle that the entire system, and particularly the eliminating system, should be as nearly normal as possible. Robert T. Morris very strongly states that all the avenues of elimination should be open and active, in order to overcome conditions that lead to autointoxication and render infection more probable. I do not here intend to take up your time with the minor details of preparatory treatment, but will mention some of the important points that should be considered in order to make the postoperative condition most favorable.

Since many of our major operations are not performed in emergency cases, the patient should receive the preoperative attention that will tend to prevent postoperative complications. The kidneys and gastrointestinal tract should receive the proper attention. The gastrointestinal tract should be thoroughly cleansed for some days before operation for if the patient is given a physic only the day before, as is often done, the bowels will retain more or less fermentative material. The patient should drink large quantities of water, several quarts a day, if possible. This procedure washes out the stomach and intestines, flushes the kidneys, fills the tissues full of water, helps to prevent suppression of urine, alleviates thirst, and helps elimination through the skin. In other words, it opens the three principal avenues of elimination.

In the last two years, as will be readily seen by the literature, surgeons have given more attention to postoperative treatment than ever before. Many operations have their particular postoperative treatment, which I will not consider, but there are general considerations which apply in common to a good many postoperative conditions.

The surgeon's responsibility does not end with laying down the scalpel but continues until convalescence has taken place. Many operative procedures would be rendered useless by failure to carry out the proper after-treatment. It would be of slight avail to cut a urethral stricture if the subsequent passage of the sounds were not rigidly enforced, nor would a good result be obtained following resections of bones and joints if no attention were paid to the position of the parts.

The purpose of after-treatment is to prevent complications, but failing in this, to recognize them early, be they simple or grave, and so intelligently to treat them as to give the patient not only the best chance for recovery but the best final functional result. Not only must the wound or injury itself be treated but the entire organism must be brought to as nearly a normal condition as possible. Each case must be studied individually as regards the previous habits of life and complicating disease. The mental status of the patient must be understood and the general physical condition must receive attention.

Postoperative Posture of the Patient.—Much has been said upon the important subject of the position of the patient, immediately following operations. Rest, bodily and mental, is the first consideration. It seems to be a custom or fancy, among American surgeons especially, that after all operations of severity, the patient must be placed in the dorsal or recumbent position, in which uncomfortable posture he is forced to remain, not being allowed to turn on either side for several hours or days. Allingham of England and Fowler of New York appear to be the first to abolish this ancient custom, to which there are many rational objections.

The proper position, I think, is the right side, when the patient is taken from the operating room or begins to recover from the anesthetic. The heart's action is not interfered with; the tongue drops to one side of the mouth and does not drop back into the throat; if the patient vomits, he can vomit more comfortably; regurgitation of the mucus into the trachea is not so likely to occur; the mucus in the stomach, which has probably been swallowed during the anesthetic or shortly after, and contains ether, more readily passes through the pylorus to the duodenum; and the patient is able to draw up his limbs and relieve the tension on the abdominal muscles. Later, he may be allowed to take any posture that is comfortable. This rule, of course, does not apply to patients that require a particular posture for drainage purposes.

Anesthetic Vomiting.—This is one of the first symptoms that we encounter in postoperative treatment. In the ordinary case it does not amount to much, but sometimes is persistent and prolonged for several days. When not traceable to other causes, uncontrollable vomiting must be attributed to nervous disturbance. The character of the vomit does not differ from that of typical anesthetic vomiting. These patients continue to vomit in spite of ordinary treatment. In such cases, systematic lavage of the stomach must be practiced and repeated at intervals of four to eight hours, until vomiting ceases. Instead of using the tube, the patient may be given large draughts of water containing some alkali, as bi-carbonate of soda. Following the lavage of the stomach 1-12 gr. cocaine hydrochlorate, 5 gr. bismuth sub-nitrite and ½ gr. cerium oxylate may be given dry on the tongue. Spraying the nose and throat with 4% solution of cocaine will be found useful in some cases. Frequently rinsing of the mouth with cold water will add to the patient's comfort. I do not advocate the use of morphine, although it is recommended by others. It may decrease vomiting temporarily, but tends itself to cause persistent nausea and vomiting.

In neurotic individuals, the use of counter-irritation over the epigastrium by means of a mustard plaster or even the thermo cautery may be useful.

I have seen one patient, who vomited for ten days after an ovariotomy and to whom no treatment was of avail. The vomiting finally stopped sponta-

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

neously. Nutrition, in this case, was maintained by nutritive enema. All medication by the mouth should be withdrawn while the attacks of vomiting continue.

Pain.—Morphine should not be given if its use can possibly be avoided, especially in laparotomy cases. Here, even small doses of morphine stop the peristaltic action of the bowels and cause distention. In neurotic cases, hypodermic injections of sterile water will often suffice. The pain usually stops in twenty-four hours, but in patients who are restless and neurasthenic it often continues longer.

Postoperative Shock.—Postoperative shock and hemorrhage are termed by some surgeons collapse. Pure collapse and pure shock may possibly be distinguished in laboratory experiments, but clinically the two are usually so closely combined as to render distinction impossible. So far as the treatment is concerned, they are identical. Some surgeons term collapse an inhibition of the vaso-motor center in contrast to shock, which is exhaustion of the center. The etiology of surgical shock has never been fully determined or satisfactorily explained.

The condition is defined by Gould as "a relaxation or abolition of the sustaining and controlling influences which the nervous system exercises over the vital organic functions of the body, the result of a profound impression made upon the cerebrospinal axis, either directly through the agency of an afferent nerve or through the circulatory system."

According to Warren, postoperative shock is a peculiar state of reflex depression of the vital functions, especially of the circulatory system, due to nervous exhaustion resulting from irritation of the peripheral ends of the sensory and sympathetic nerves followed by marked lowering of the vital powers and relaxation of the vaso-constrictors.

The degree of shock is dependent upon the severity of the irritation as well as the length of time which this continues in existence. In the treatment of shock it is well to remember that the symptoms of shock, which appear during or immediately following an operation, are often so closely interwoven with those induced by toxic quantities of the anesthetic or those dependent upon asphyxia that they may easily be attributed to other causes, or conversely, the toxic phenomena may be erroneously referred to surgical shock.

In determining the character of the shock, the condition of the system prior to the operation or the time required to complete the operation should be taken into consideration. If the pathology of shock is due, as has been stated by some authors, to vaso-motor disturbance and relaxation of the vaso-constrictors, I think the use of adrenalin chloride the best treatment for this condition, and have noted marked change in the character of the pulse after the administration of 30 min. of adrenalin chloride. I think, at this stage, the use of large doses of strychnia, digitalen, normal salt solution, and especially nitro-glycerine, which has become a matter of habit, and is mentioned only to be condemned, is in direct contrast to the pathology.

The recent experiments of Crile and the conclusions which he has drawn have awakened general interest. Crile believes that the essential features of surgical shock are the exhaustion or paralysis of vaso-motor centers which control the tone of the peripheral circulation. To the surgeon of to-day the essential fact brought out by Crile's experiments is that strychnia in very large doses, as it is now often given as a stimulant in the treatment of shock, is practically of no value, and in pronounced cases may even increase the condition it is intended to relieve.

The action of the heart is decidedly weakened during shock, and large doses of stimulant causes it to contract with great force for a few beats and finally stop in dilatation. On the other hand, if the heart can be kept going with small doses of stimulant until the vaso-motor system regains its equilibrium, no damage is done; but I think that many patients are over-stimulated during shock.

As a prevention of shock, all operations should be performed as rapidly as is consistent with good surgery, and all unnecessary exposure and manipulation of parts especially connected with the sympathetic nervous system should be avoided. This is especially true in brain surgery, and in cases of trephining after injury, where a considerable degree of shock already exists, the use of the mallet and chisel only increases this condition. In cases of collapse from hemorrhage or shock, and during the course of severe abdominal operations, there is little doubt that information concerning arterial pressure will be of value to the surgeon. Many forms of apparatus have been devised to serve this purpose. The Riva-Rocci instrument, which has been in use since 1896 in Italy and has been introduced in this country since 1900, appears to have as many advantages as any other instrument brought to our attention. It is probably sufficient for all clinical purposes. It may be that Cushing takes an enthusiastic view of the matter in his predictions that in appropriate cases the routine observations upon blood pressure will soon come to occupy the same relative position that pulse and temperature occupy at present.

When the condition of the patient or character of the pulse is such as to predispose to shock or sudden or unexpected loss of blood, providing the source of the hemorrhage has been stopped, or if from any other cause we recognize symptoms which indicate impending shock, preventive measures should be adopted at once, such as the use of adrenalin or alcohol. I believe, in such cases, the use of alcohol or adrenalin previous to the operation is a very important preventive measure, and alcohol especially if the condition is likely to be psychical. As regards adrenalin, it may be stated that this drug is contra-indicated by possibly interfering with the renal secretion, but given with alcohol, I think this is partly overcome.

Postoperative shock has been divided into four different classes: first, surgical shock due to vaso-motor depression, nervous exhaustion or vital depres-

sion without hemorrhage, second, shock as the result of hemorrhage, third, postoperative shock from the toxic effects of the anesthetic, fourth, shock produced by mental disturbance—sometimes called nervous collapse.

The diagnosis of the particular form of shock is a very important factor in the treatment of shock. For instance, in shock due to vaso-motor depression or nervous exhaustion without hemorrhage, the patient immediately, or within an hour or two following the operation, passes into a condition of more or less profound prostration, and the absence of hemorrhage and the exclusion of the anesthetic narcosis will be obvious reasons for diagnosing this form of shock. In the treatment of this form of shock, according to the experiments of Crile, the best results have been obtained by the use of morphine, alcohol and adrenalin, administered hypodermatically, and alcohol by rectum or other nutritive enema. In postoperative treatment, it is very important to wash out the rectum, first removing all mucus coating thereof, that prevents the absorption of the enema. Another important point is that the enema should not be of large quantity, not more than four to six ounces of liquid, as large quantities, under these conditions, are often not well retained on account of the relaxed condition of the sphincters; but no trouble is encountered with the retention of small quantities of liquid. Strychnia can be used in cases where there is embarrassment of respiration.

Dr. N. C. Morse, of Iowa, who has given the question of postoperative treatment a great deal of consideration, objects to the Trendelenburg position in this form of shock, and especially so if the patient is plethoric, as it causes congestion of the already congested vessels of the head and tends to aggravate the condition. Capillary congestion may be relieved by vigorous rubbing, and cloths wrung out of hot mustard water may be applied to the pectoral region.

Shock as the Result of Hemorrhage.—This is the most fatal form of postoperative shock. It is this class of cases that taxes severely the resources of the attending surgeon. The diagnosis of this form of shock is not difficult except when the hemorrhage is concealed.

To rely upon strychnia or other heart stimulants in this form of shock is fatal. The recognition of hemorrhage or the loss of blood and the checking of the hemorrhage is the first and most important thing. While this is being done, the patient's head should be lowered for two purposes: to keep the brain active by nourishing it with what little blood there is in the body, and possibly elevating the point of hemorrhage to make the blood pressure less at that particular point. If the patient is in a very bad condition, do not simply elevate the bed a few inches, but stand the patient almost on his head, if necessary, until the hemorrhage can be checked. After the bleeding is stopped, use saline solution (subcutaneously and rectal), alcohol, and possibly strychnia. Elevate the limbs at right angles to the body and, if necessary, bandage them tightly to force what little blood there is left to the brain. Also, compression of the abdominal aorta in many cases may serve as an important aid while the hemorrhage is being checked.

Difference Between Shock and Hemorrhage:

Symptoms in general	Shock Often regressive	Concealed hemorrhage. Always progressive!
local symptoms	Absent	Often present, e. g. cough; localized pain or tenderness; abdominal distention; vomiting; hematemesis; hematuria; etc.
Mentality	Dull; stuporous	Active
Restlessness	Slight.	Often great
Pallor	Moderate	Very marked—especially of mucous membranes; progressive
Sweating	Frequently present	Usually absent
Respiration	Rapid	Marked and increasing "air-hunger"
Pulse	Rapid and weak	More and more rapid and weak
Effect of intravenous infusion	More or less lasting	Transitory.
Effect of other stimulants	More or less lasting	Transitory.
Temperature	Variable; may be subnormal	Often markedly subnormal
(Specific gravity of the blood	Increased	Decreased)

Shock from the Toxic Effects of the Anesthetic.—Here the symptoms usually appear during anesthesia or very shortly afterwards. The patient has the ordinary symptoms of shock but of milder type. Here strychnia is important as a restoratory stimulant. The Trendelenburg position should be used as the pathology of this form of shock is often cerebral anemia. Artificial respiration, oxygen and dilatation of the rectum and the application of warmth should be used.

Shock Produced by Mental Disturbance.—This occurs in neurotic and alcoholic patients and those of very timid character, and often very trivial operations cause all the phenomena of profound surgical shock. Fortunately, fatal cases are exceedingly rare, the usual type being mild and transient in character. The introduction of a sound in the urethra has been followed by severe shock and the introduction of an aspiratory needle into the pleura has been followed by immediate death. Relaxation of the sphincters, polyuria or profuse diarrhea may be cited as signs of psychic shock. It is characteristic of this form of shock that it is late in developing. The diagnosis is ordinarily easy when there is present restlessness, excitability and the characteristic expression of the face, and there is absence of hemorrhage or anesthetic narcosis and especially when we have reason to believe from the character of the operation that the nature of the shock must necessarily be of neurotic origin. Delirium often follows this form of shock in neurotic patients. Extreme alcoholics usually develop delirium after traumatism.

The treatment of this form of shock is often symptomatic. If a child, remove the feeling of fear. If an alcoholic, give alcohol. All active measures or excitement should be avoided. Rest and perfect quiet, as far as possible, should be enforced. Bro-

mides are highly recommended. The alleviation of pain by morphine is often necessary and morphine can be readily used, as this form of shock is often late and after the secretion of the kidneys has been established.

OPSONIC INDEX AND VACCINE THERAPY.

By RENE BINE, M. D., San Francisco.

For many years scientists have been trying to explain the phenomena of immunity. Pasteur ascribed the death of the germs in the body to the exhaustion of suitable food. Others thought that the germs secreted products which gradually produced their own destruction. The theories which have enjoyed the longest life are those generally known as the cellular and the humoral, and their advocates have been divided into two schools. According to Metschnikoff and his followers, certain movable body-cells prevented or inhibited microbic invasion. On the other hand, Pfeiffer, Buchner, Bordet and particularly Erlich, have contended that the germs do not prosper in the system, owing to the antagonistic action of substances in the body-fluids. More recently Buchner has admitted that part of these substances undoubtedly have their origin in the polymorpho-nuclear leukocytes, thus seemingly abandoning the purely humoral theory. Metschnikoff, however, maintains that the substances actively concerned in the destruction of infecting bacteria, never act outside of the leukocytes. Neither theory has satisfactorily explained all questions. If, as Erlich assumes, immune substances are produced by those cells upon which bacteria exert their nefarious action, how may one interpret the natural immunity towards the many harmless saprophytes? And if Metschnikoff is correct, why do not phagocytes attack all bacteria? If we admit that active immunity has educated the cells to withstand certain bacteria, why is it that if in passive immunity the cells are stimulated, this immunity is exhibited only towards certain micro-organisms?

The work of Denys and Leclef,[1] Leishman,[2] Wright,[3] and Douglas[4] has resulted in the elaboration of a new theory, a theory which takes a stand really midway between those of the cellular and the humoral schools. This theory admits the fact that the remarkable activity of the leukocytes is a great factor in defending the system, but it maintains that the leukocytes are powerless to destroy the bacteria unless these have been previously influenced or prepared by the action of certain substances in the serum. These substances were given the name of "opsonins" by Wright, and he particularly emphasized the importance of estimating their amount in individual cases for diagnostic and therapeutic purposes.

The object of this paper is to call attention to the results obtained by the use of bacterial vaccines, generally speaking, and to show why the technic of determining the opsonic index was destined, in its present form, to meet with disfavor.

In order to disillusionize any who may think that Wright has given us an unassailable theory as to the causation of immunity, the following facts, as yet unexplained, are simply mentioned.

a. The bacteria of the same group as the bacillus of diphtheria are taken up by the leukocytes as well with heated serum as with normal serum. The question arises as to whether this is due to spontaneous phagocytosis in the absence of opsonins, or whether it is due to the presence of a thermostabile opsonin (all others are thermolabile).

b. Many experiments with corpuscles obtained from various animals have shown that very infectious strains of germs are frequently more easily taken up by the phagocytes than less virulent cultures. This would seem to place our capillary tube experiments in contradiction with animal tests. For it has been similarly shown that a normal serum markedly bactericidal for anthrax, is by no means an indication of an animal's corresponding resistance to the disease.

For the *determination of opsonic indices* of patients, we require (1) normal sera for controls and the sera of patients, (2) washed corpuscles, (3) bacterial emulsion.

To obtain these various sera it is best to use the curved glass tubes devised by Wright. By wrapping a piece of bandage around the finger, a venous congestion is produced. One end of the closed glass tube, drawn out to a point, is used to stick the finger near the root of the nail. Both ends are broken off and blood is drawn up through the short limb, the lumen of which must not be too narrow. The straight end is again sealed with the flame, at a distance of 4 to 5 cms. from the body of the tube, so as to avoid heating the blood. The rarefied air now contracts and the blood is drawn further in, leaving the other end a bit free, so that it, too, can be sealed, though this is not necessary if it is to be used immediately. (One must always use freshly obtained sera in this work, as the opsonic power is gradually lost on standing, and this loss varies with different sera.) The blood is allowed to clot, and the tube suspended by its bent limb into the tube of a centrifuge and centrifuged. The serum being thus obtained, the bent limb is snapped off.

(2) A few drops of blood are received into a small glass tube two-thirds filled with 1.5% solution of sodium citrate. This solution disintegrates rapidly, so that it is best to make fresh solutions daily. The blood is well mixed and the tube centrifuged until the corpuscles settle. The clear fluid is pipetted off, and the corpuscles mixed with enough 0.85% salt solution to fill the tube as before. After again centrifuging and removing the supernatant fluid, the corpuscles are mixed, and are now ready for use. No attempt is made to preserve the thin gray upper film, rich in leukocytes, this having been found useless and time consuming. These corpuscles can be obtained from any person, provided that they are not subject to agglutination with other sera; it is more satisfactory to have the

worker furnish his own, and as they do not preserve their integrity after several hours' standing, this must be done daily. In making a series of counts, one must use the same tube of washed corpuscles throughout the series.

(3) The making of the emulsion varies with the organism used. For tubercle it is by far the easiest to use the dead, dry bacilli, such as may be obtained from Meister Lucius Brunning, Hochst, a. M. A small amount of this product is ground up in an agate mortar, first alone until finely powdered, then adding very slowly, drop by drop, 1.5% salt solution until first a paste and then an emulsion are made. Great care is required in all this to avoid, as far as possible, the presence of clumps. The emulsion is then sterilized (60° C. for 1 hour). It cannot be used for more than 10 days. It is kept in tubes with one end drawn out, so that the clumps which settle can be removed by cutting off this end, and the upper opalescent layers used. The emulsion should always be examined before use. If clumps are present, centrifuging is necessary. If not enough bacilli have remained in suspension, a new emulsion should be made. For making emulsions of other bacteria, a platinum-loopful of the growth from a live agar culture is diluted with 0.85% salt solution, and mixed thoroughly.

One volume of washed corpuscles, one of serum and one of bacterial emulsion are drawn up into a pipette and then blown out and thoroughly mixed on a clean slide, then drawn up into the pipette again and the end sealed in the flame. This must be done carefully but rapidly so as to exclude all possibility of spontaneous phagocytosis. The mixture is then placed in an incubator at a temperature of 37.5° C. For this work Dr. Freeman has devised an incubator with 20 tubes into which can be placed the glass pipettes. This instrument has been called an opsonizer.

After a definite time—20-30 minutes—the pipette is removed from the opsonizer, the end cut off and the contents used for examination. A drop is received upon one end of a slide, previously roughened by vigorous rubbing with emery paper, and the smear made by means of a so-called spreader. This is a slide, so broken as to give a barely visible concave edge. The white blood corpuscles adhere to the spreader until the end, and thus a film is obtained with almost all the W. B. C. at the very edge. Smears are fixed in corrosive sublimate solution. Tubercle is stained according to the Ziehl Neelsen method, other bacteria with carbol-thionin or methylene-blue.

The average number of bacteria ingested by one W. B. C. is the phagocytic index:—P. I. All polynuclear cells must be included in the count, excluding, however, those which have ingested obvious clumps of bacteria, and avoiding those parts of the slide where the cells are broken up, or where cells or bacteria are poorly stained. The patient's P. I. divided by the normal P. I. (the average of at least three tests with different healthy sera) gives the opsonic index:—O. I. For example:

Average normal: 100 W. B. C. contain 375 bacteria. P. I., 3.75.

Patient's serum: 100 W. B. C. contains 225 bacteria. P. I. 2.25.

And 2.25 divided by 3.75 equals 0.6, the O. I.

It is useless to count less than 100 cells, and while some claim that basing a result on less than 1,000 [21] cells is an error, the writer's experience has shown him that following the above rules in counting, different workers will obtain fairly constant results with the same slide. The entire technic must be accurately carried out. Improperly washed or aged corpuscles, inconstancy of temperature or period of incubation, varying density of emulsion, the use of pipettes of varying caliber, etc., so influence results as to make them valueless.

Instead of the methods which have been recommended to standardize the emulsions used, e. g., comparison with chemical suspension, counting the bacteria to the cubic millimeter, etc., it has been found [5] that the making of a preliminary index determination with the normal serum as a control, is easier to carry out. Working with bacteria other than tubercle, the culture used should always be of the same age, to obtain, as near as possible, uniformity as regards their virulence.

Another possible source of error may be eliminated if the same volume of corpuscles is used for each test. This might occur if blood were used from the patient, instead of washed corpuscles and serum. The latter has been lately advocated [6] with the idea of shortening the technic, but it seems as if it would also increase its accuracy.

The vaccines, with the exception of the tubercle, are nothing more than sterilized and standardized emulsions of cultures of the particular germ producing the infection. The organism is grown, e. g., in the case of staphylococcus, upon a broad slant agar surface, in the case of gonococcus upon ascitic agar; the 24 to 36 hours' growth is removed with 0.85% salt solution by means of a glass rod, and thoroughly emulsified by shaking in a test-tube for at least one-half hour to break up all clumps. The number of germs in the vaccine is calculated by comparing the number of germs and red corpuscles in a mixture of one part emulsion, one of freshly drawn blood, and any amount of salt solution as diluent. For this purpose one uses the same style of pipette as before, and a drop of the mixture is received on a slide and stained with any ordinary stain.

The vaccine should be kept in a dark bottle, ¼ of 1% lysol added to it to insure its keeping, and a rubber cap coated with paraffin, is used for a stopper. Instead of the cap used by Wright, a good rubber nipple can be advantageously employed. When an injection is to be made, the cap is sterilized with pure lysol and the needle stuck through it and sufficient vaccine drawn up into the syringe.

Tubercle vaccine is the "New Tuberculin Koch," though Wright has also used a bacillary emulsion made on the above principle. It appears, however, that excellent results are to be obtained with Koch's Old Tuberculin, Beraneck's, Denys' or Spengler's

Tuberculins, provided that the preparation employed be properly administered.

It must be remembered that Pasteur, Haffkine and others used vaccines to produce immunity long before Wright, but it is Wright who deserves the credit of having popularized their use.

I shall use Wright's own words in explaining the theories embodied in vaccine therapy.

"Protective substances may be defined as substances which enter into destructive chemical combination with bacteria, or, as the case may be, with other foreign elements introduced into the organism. A vaccine is any chemical substance, which, when introduced into the organism causes there an elaboration of protective substances. The bacterial vaccine inoculated, by entering into combination with the protective substances in the organism, withdraws a certain quantum from the organism. Under the stimulus of this deprivation, the cells of the organism are stimulated to activity, with the result that the protective substances withdrawn are replaced with usury.

"This is confirmed by the estimation of the opsonic index following inoculation of a vaccine. A diminution in protective substances is shown by a period of lowered index—the negative phase; this is followed by an increase of protective substances, the opsonic index is raised—this is the positive phase.

"When only a small dose of vaccine is inoculated, the negative phase may be so fugitive as hardly to appear on the record, but the positive phase will be correspondingly diminished. When an unduly large dose of vaccine is inoculated, the negative phase is prolonged and much accentuated. The positive phase may in such case make default.

"This shows that we can select the appropriate time and dose with certainty only by examining the blood and measuring its content in protective substances in each case before re-inoculating.

"For according as we choose our time and our dose, wisely or unwisely, we may obtain a cumulative effect in the direction of a positive phase or a cumulative effect in the direction of a negative phase."

If this were literally true, it is obvious that nothing could replace the *laboratory control of vaccine therapy*. Let us see whether this be so or not.

In a study of this subject [5] in regards to tuberculosis, the writer found that the normal index varied within fairly narrow limits from day to day. In tubercular patients, with the lesions located elsewhere than in the lungs, the index was usually constantly low. Pulmonary cases showed indices which fluctuated considerably, being now low, then high, according as the patients were subject to auto-inoculations, i. e., discharges of bacterial products from the seat of their infection into their general circulation. Unless the occurrence of auto-inoculations be eliminated, one cannot in these cases estimate the effect of tuberculin injections, nor even expect benefit therefrom, for cumulative negative cannot be prevented.

Auto-inoculations are eliminated, or their frequency decreased, by a period of rest in bed. After a time it is found that a patient can be allowed moderate exercise without harm. In fact it has been recently shown [7] that exercise can be so graduated, if controlled by the opsonic index, as to produce a series of auto-inoculations, with the intention of replacing the therapeutic use of tuberculin. If this could be generally done, it would be a great step in advance, for we would be inoculating our patient with tuberculin produced by his own particular species of bacilli, and this would do away with discussions as to whether in each individual case, bovine or human tubercular products should be used.

On the other hand, excellent results are being reported in cases of tuberculosis of glands, bones and skin. [8-9] In the latter, owing to the poor vascularity of the tissues involved, injections alone cannot be relied upon to do much good. In fact, vaccine treatment is not meant to replace, but to assist other methods of treatment. Practically every European clinician of note is now, with great satisfaction, using tuberculin, without the index control, in selected cases of pulmonary, peritoneal, osseous and urogenital tuberculosis. [10] In this country, the method is gaining advocates every day. [11] It is worthy of mention, that whereas patients have not only been greatly improved, but their tolerance for tuberculin raised a thousandfold, the writer has never seen or heard of an index being raised very high by treatment.

Staphylococcus infections have been most amenable to treatment with vaccines. Acne, furunculosis, sycosis, carbuncles, discharging sinuses, pyorrhea alveolaris, have all either yielded or improved so rapidly as to convince even skeptics of their efficiency. The writer has seen a case of sycosis and one of axillary abscesses complicated by a severe dermatitis, which had resisted all other therapy, clear up in about a week after the use of vaccines was begun. A case of lupus of the hand, complicated by pulmonary tuberculosis, with sputum rich in tubercle bacilli and staphylococci, and with a markedly intermittent temperature, was treated with tuberculin and occasional injections of staphylococcic vaccine for about three months. The patient remained at his work, he gained in weight, the sputum contained but few bacilli, the temperature fluctuated but slightly, and the lupus was arrested. Unfortunately at about this time business cares obliged the patient to work night and day, and he dropped the treatment until he had brought on a pulmonary hemorrhage which almost proved fatal. Rest in bed and another series of injections has again produced an arrest of the process in the lung, his temperature is normal and the lupus is almost healed. Another patient with cervical glands which had been operated, who presented several enlarged tubercular glands and discharging sinuses, and with slight pulmonary involvment, has been much improved by tuberculin and staphylococcic vaccine injections, there being but a very small spot on his neck which has not yet healed. Cases of staphylococcic sepsis [23] have been cured by vaccines

obtained by blood cultures from the patient. The writer tried this treatment on a little girl with a very severe endocarditis, but her condition was hopeless from the start, and, as expected, no benefit was obtained.

Streptococcic infections have not been as amenable to results as staphylococcic ones. Post-operative fistulas [12] have in some instances yielded to this form of treatment, while cases of erysipelas [13] have not shown, on the whole, any more favorable course than non-injected ones. Septicemias [25] have in some cases been reported as cured by vaccines. Some cases of apparently fatal puerperal septicemias [22] have been reported as cured by means of vaccines.

By the use of a typhoid serum, which is, according to Wright, really a bacterial vaccine, Chantemesse [14] has had a mortality during the last six years of 4.3% of 1,000 cases, in contrast to 17% mortality of 5,621 cases in other Paris hospitals where no serum is employed. Wright has used typhoid vaccines as a preventive measure in the English army, first introducing them in 1897. After a while his method brought forth considerable discussion, and it was abandoned. Over a year ago a commission was appointed to investigate the matter, and resulted in vaccinations being reintroduced in the army.

Coli infections of the gall-bladder, urinary bladder, uterus and peritoneal cavity have been successfully treated with vaccines. [26]

Cases of pneumonia, grippe, empyema and malignant endocarditis with sepsis are also reported, the latter treated without opsonic control. [15] Investigations on coli and pneumococci have shown conclusively that these micro-organisms vary in each host, and that probably there are many species which exhibit the same microscopical and cultural appearances. This emphasizes the importance of using vaccines made from bacteria obtained from the patient. Wainstein [27] reports three cases of post-operative fistulas, ten cases of catharrhal endocervicitis, all of which cases had resisted other treatment, cured by pneumococcic vaccines.

Gonococcal infections have certainly been benefited by vaccines. Cole [16] of Johns Hopkins reports cases of arthritis treated with excellent results, though index determinations he deems too inaccurate to be of use. Butler and Long [17] of Chicago have treated twelve cases of vulvo-vaginitis in children with gonococcal vaccines. In four the clinical evidences of the disease disappeared in from ten days to three weeks, and the gonococcus was not to be found in smears from wipings from the vaginal mucosa, taken at intervals of several days. In five others a cessation of discharge and disappearance of gonococci from smears was attained after several weeks of treatment. The last three, owing to probable reinfections, are not so conclusive as the other nine. By comparison with a series of twelve cases treated with local antiseptics, the writers conclude that the vaccine method appears to be far more efficient and scientifically more tenable than the local antiseptic method. Dr. Vail [18] of Chicago reports a series of twenty-five cases of acute and chronic urethritis treated with vaccines, and while no conclusions are drawn, it would seem as if the results were good proof of their efficacy.

Hutchings [19] of Detroit has used vaccines in thirty-two cases, there being in this series, urethritis, arthritis, vaginitis, some cases complicated by orchitis, prostatitis, cystitis or endometritis. His results are very good, but he comes to the natural conclusion that better results are to be had when other treatment is combined with bacterial inoculation.

E. Irons [24] also reports good results, especially in the chronic forms of arthritis. Results certainly justify the more general trial of gonococcic vaccines, more especially in chronic cases, such as arthritis, where our usual medication is most frequently of no value.

Vaccines made from the micrococcus neoformans have been used by the London school in cases of cancer, where they claimed the above coccus as a secondary infection is often responsible for the bad odor and rapid breaking down of tissue. Doyen of Paris is inclined to go so far as to believe his coccus the germ of cancer and uses a vaccine analogous to Wright's with apparently remarkable results, though in a study of the subject from the latter's standpoint, he was unable to find a constant normal index, nor was he able to get typical opsonic reactions with his vaccine. Though everything seems against the M. N. being the cause of cancer, no culture has ever been obtained from a closed cancer (the mammary gland is not closed), the writer is forced to admit that he saw many of Doyen's cases which seemed remarkably benefited by the treatment. It must be said that Doyen does not confine himself to his vaccine, but combines its use with whatever other method offers any chance of aiding the patient, so that it may naturally be questioned whether the same results would have been obtained without the vaccine. But in a great number of inoperative cases, seemingly hopeless cases, confirmed by pathological methods, results are certainly being obtained that are far ahead of anything the writer has ever seen.

Of three cases of cancer treated by the vaccine method, in one, a squamous celled carcinoma of the superior maxilla, Dr. Hutchings of Detroit [20] was able to prolong the patient's life several months as well as to make her much more comfortable. The other two cases, one of which was a carcinoma of the lung with lung metastasis, the second, generalized carcinomatosis from a uterine cancer, showed no benefit.

CONCLUSIONS.

1. Wright's researches have greatly advanced the study of immunity. Opsonins are apparently different from all the other anti-bodies.

2. Leaving aside the question of accuracy of technic, the estimation of opsonic indices is too difficult and time consuming to be of practical use in therapy.

3. In many forms of tuberculosis, in acne, furunculosis, gonorrhoeal arthritis, vaccines are our most effective weapons; in other infections they frequently give us excellent results.

The question as to the value of the opsonic index in diagnosis has been purposely omitted from this discussion.

REFERENCES.

1. Denys and Leclef. La Cellule, Bd. xi, 1895.
2. Leishman, Brit. Med. Jour., 1902, p. 77 et seq.; Transactions Path. Society, Bd. lvi, 1905, p. 344 et seq.
3. Wright has issued so many papers that enumeration is impossible. They are scattered throughout the Practitioner, the Lancet, the Brit. Med. Journal and the Proceed. Royal Soc., London, from 1902 to date.
4. Douglas ditto.
5. This work has been done with Dr. Lissner of Los Angeles. See Bine and Lissner, Munchener Med. Woch., 1907, No. 51.
6. Brown. Jour. Amer. Med. Assoc., p. 602, 1908.
7. Inman. Lancet, p. 220, 1908. Patterson, ditto.
8. Sanborn. Boston Med. and Surg. Journ., April 9, 1908.
9. Bulloch. Lancet, p. 1603, 1905. Western Lancet, Nov. 16 and 23, 1907.
10. The best articles on these subjects are by Sahli, a reprint from Correspondenz-Blatt fur Schweizer Aerzte, and by Bandelier and Roepke, a monograph published this year.
11. Trudeau. Journ. Am. Med. Soc., p. 175, 1906. Rotch and Floyd. Journ. Am. Med. Assoc., Aug. 24, 1907. Potter. Journ. Am. Med. Assoc., p. 1722 and 1792, 1906. Miller. Univ. of Penn. Med. Bull., May, 1908.
12. Weinstein. Berl. Klin. Woch., p. 1007, 1906. Frith-Hagans. Surg. Gyn. and Obs., p. 427, 1907. French. Brit. Med. Journ., p. 258, 1907.
13. Schorer. Am. Jour. Med. Soc., Nov., 1907. Duncan & Inman, New York Med. Jour., Sept. 19, '08.
14. Chantemesse, Hygiene Generale et Applique, p. 577 et seq., 1907.
15. Macdonald. Brit. Med. Journ., p. 136, 1905. Beebe and Medalia. Bost. Med. and Surg. Journ., Jan. 9-16, 1908.
16. Cole and Meakins. Johns Hopkins H. Bull., p. 223, 1907.
17. Butler and Long. Journ Am. Med. Assoc., p. 744, 1908.
18. Vail. Surg. Gyn. and Obs., p. 397, 1907.
19. Hutchings. Am. Journ. Dermat. and G. U. Dis., p. 46, 1908.
20. Written communication.
21. Fitzgerald, Whiteman and Strangeways. Bulletin of the Committee for the Study of Special Diseases, Aug., 1907.
22. Crowe and Wynn. Brit. Med. Journ., Aug. 8, 1908.
23. J. Mackie White. Scottish Med. and Surg. Journ., Dec., 1907.
24. E. E. Irons. Archives Internal Medicine, May, 1908.
25. Sutcliffe & Bayley, Lancet, Aug. 8, 1907.
26. Dudgeon, Lancet, Feb. 29, 1908. Clarke, reference Journ. Am. Med. Assoc., Oct. 3, 1908.
27. E. Walnstein, reference Munich M. W., p. 1451, '08.

CEMENTWORKER'S ITCH.

Translated by D. W. MONTGOMERY, M. D., San Francisco.

René Martial has just published an article in the Revue Pratique des Maladies Cutanées (*) that should be of interest to physicians in San Francisco. It appears that cement frequently acts very harshly on the skin causing an irritation of the hands, breast and face, and it is very necessary, because of the difference in treatment, to distinguish the eruption from scabies, which it is apt to resemble.

The use of cement has increased particularly in San Francisco since the fire, and we therefore may expect to run across this particular affection with growing frequency.

What is cement? Cement is a mixture of carbonate of lime, silicic acid, alumina and iron ground up together and exposed to heat. It contains from one to five per cent of sulphuric acid as sulphates, two to five per cent of magnesia, and from eight to ten per cent of alumina. According to its composition it will "set" in from two to fourteen hours. Many samples of cement, analyzed by Martial, contained from 0.80 to 1.20 per cent of caustic soda.

Varieties of Cement. Its harmfulness. As can be seen by the enumeration of its constituents, cement is chemically very active, and contains many substances irritating to the skin, as carbonate of lime, silica, magnesia and sulphates. The activity of these substances is still further increased because of the water with which it has to be mixed. The water macerates the skin of the workman, and at the same time increases the chemical activity of the substances in the cement, causing them to bite more viciously into the integument. As a rule, the quicker a cement "sets" the more dangerous it is to work with. The hands of the workman, as being most exposed to the chemicals, suffer most severely, but with those who work on vaults and ceilings the face, especially the periorbicular region, is often affected. Moisture is a predisposing cause, and erosions or cuts of the hands for example are frequently starting points for the eruption.

Description. The elementary lesion of the eruption is a papule, very small at its commencement, scarcely larger than a small pin head, which soon grows to the size of the head of an ordinary pin. This eruption is very itchy and this itchiness, like that of scabies, increases with the heat of the bed. Through the itchiness and consequent scratching the papules grow rapidly larger and become excoriated, and covered with a thin, black crust. In acute cases there may be edema of the fingers, back of the hands and forearms. As in the true itch the eruption shows a predilection for the webs of the fingers, and tends to be grouped about the wrists, about the bend of the elbows, and even in the axillae. As the men often work with shirt thrown open, the eruption frequently appears over the breast.

Contrary to the true itch there are very few lesions of the palms or of the thenar eminences, and the eruption often appears on the face, where it never appears in the true itch. Of course there are no burrows as in scabies.

Complications. The above is a description of the primitive eruption, that, however, shortly alters its appearance. When the attack has lasted some time the lesions extend, and flatten out, larger papules appear that are vaguely polygonal, polished, red, and quadrilliated, and that become confluent, in short lichenification appears; or the excoriated papules become confluent seap and become eczematous. Lichinified and eczematous patches are found side by side. On becoming eczematous the eruption may extend to other parts of the body, as in other professional eczemas. The itchiness becomes so lively that the patient is unable to sleep, and moistens his hands constantly in cold water. The affection is always graver in summer than in winter, and seems clearly to be intensified by the sweat. Finally the lesions can become infected and give rise to pyodermites, but this is quite rare.

Duration. The duration and the intensity of the eruption are variable. One patient was afflicted for five months. Ordinarily on ceasing work the eruption clears up in one or two weeks.

Diagnosis. The diagnosis is easy if one thinks to inquire into the patient's occupation. The mimicry with scabies is, however, striking, and one must remember that a patient may have cement dermatitis and scabies at the same time.

Treatment. The treatment in the first place consists in stopping work and in the application for two to three days of Lassar's paste, which Martial advises to be made of equal parts of vaseline, lanoline, starch and oxide of zinc. The hands may first be soaked well in weak coal tar lotion, and then carefully dried before applying the paste, or five per cent of oil of cade may be added to the paste. Or tar glycerole may be used at first weak, afterwards stronger, applying it day and night, or tar glycerole may be applied at night, and talc powder used during the day. If the eruption is acute with edema and leeting, hot compresses may be used or warm potato starch poultices; if there is infection boric acid compresses may be employed.

In some workshops thick gloves are furnished the men, and those that work on ceilings and vaults should wear large protecting spectacles.

* July, 1908.

Notice!

The State Society meets at San Jose, April 20, 21 and 22, 1909. Make your plans early and be sure to attend.

The A. M. A. meets in Atlantic City, June 8 to 11, 1909. Don't fail to attend.

RUSSELL SAGE FOUNDATION BOOK.

"Medical Inspection of Schools," by Dr. Luther H. Gulick, Director of Physical Training of New York City public schools, and Leonard P. Ayres, formerly General Superintendent of Schools of Porto Rico, is the title of the most recent of the Russell Sage Foundation publications.

The book places before the readers in convenient form for easy reference information concerning the historical, medical, educational, administrative, and legal phases of the work of medical inspection of school children. The most extensive bibliography of the subject yet compiled is added—an important feature of special value to librarians, school authorities, and students of social subjects.

Single copies, postpaid, $1.00. Charities Publication Committee, 105 East 22nd Street, New York.

POLYCLINIC GATHERING.

Cases presented by Dr. Campbell for Dr. M. Regensberger.

Case No. 1: This patient is 70 years old. He came to the clinic in May, 1908, since that time he has had two treatments a week for this epithelioma of the nose. He first noticed this growth in 1885. He was treated before the fire by Dr. W. Lehmann at Lane Hospital. During the period following the fire he was unable to have treatments. When he came here in May the trouble was much more extensive than it is at the present time. There is no specific history. Diagnosis is epithelioma. He has had two X-ray treatments per week for ten weeks. To-day patient had a severe fall on his nose which looks very bad to-night. We intend to demonstrate a course of thyroid extract in this case in connection with X-ray treatments.

Case No. 2: Mrs. I, aged 60. Diagnosis, rodent ulcer. Patient came to us on July 20th. She has had trouble over the eye beginning under the angle of the right eye. The scar is on the nose extending over the eye and was quite angry looking when she first came here. She has had X-ray treatments ten minutes at a time twice per week. When she first came the ulcer bled very easily, but it does not bleed any more. The outer angle of the wound is thickened considerably, showing the reaction of the X-ray.

Case No. 3: Diagnosis, epithelioma. Mrs. A. Patient first came to us July 29, 1908. Patient first noticed trouble six or seven months ago when a little pimple appeared on the right side of the nose. When she first came it was covered with a black eschlar and on removing that a crater-formed looking ulcer was found underneath. She was first given a paste to put on it and told to come back for X-ray treatment. She has had six treatments and it has diminished nearly one-half in size. It is beginning to look smooth on the base and has improved very much indeed. This case has been given iodide intermittently in small doses.

Case No. 4: Keloid. This patient gives a history of nineteen months duration. There are linear raised lesions on both sides of the cheek. They are quite painless and are said to have followed being cut by a razor. He has had a paste of resorcin, but has also had X-ray treatments. Dr. Freytag does not think that this case has improved but we think it has grown a little thinner, especially the scar on the right cheek.

Dr. Welty, discussing cases presented by Dr. Campbell: With regard to the keloid case, I saw one case of keloid of the ear and it passed up to the clinic without a diagnosis being made until Prof. Politzer came in and he told us what it was. He took the whole ear off and a wax ear was made to take its place. In this particular case would it be possible to remove the keloid growth, and close the wound by the stitch that makes its appearance just below epidermis? It would improve his appearance very much.

Dr. Levison, discussing cases presented by Dr. Campbell: There are one or two points mentioned by Dr. Freytag, with regard to the treatment of growths by the X-ray. The first point is the statement that the X-ray does not do any harm. This is correct so far as the injurious chemical effects are concerned. The injury is done by the radiographer, who continues to treat the cancer in the hope that he will be able to cure it. He thus loses the only possible hope of curing the patient, as I have seen on several occasions where malignant growths have been treated without result. They not only have not been able to cure the cancer, but they have allowed it to develop, so that it became impossible to accomplish the cure by means of the knife. The French Surgical Congress, which convened a year ago, arrived at the conclusion that those growths which the X-ray succeeded in curing could have been cured with the aid of the knife, and those tumors which were inoperable could not be satisfactorily cured by the use of the X-ray.

In the case of the rodent ulcer, which Dr. Freytag has demonstrated, the X-ray offers an ideal method of treatment, because of the defect resulting from surgical operation, which can only be remedied by an extensive plastic operation. I fear that the X-ray people are losing sight of the fact that cancer can be cured by the use of the knife.

Another point is the treating of cancer by fulguration. Reports go to show that this procedure exercises a destructive influence upon the cancer cells, and also stimulates the proliferation of the sclerotic tissue.

In answer to Dr. Welty's question concerning the effect of operation on keloids, I might state that I have had considerable experience with this condition. Even when the growth is incised well into

the healthy tissue, and the skin carefully approximated, the process will recur in many instances. Some two and a half years ago I performed an operation for appendicitis, and the skin was carefully brought together. A keloid developed in the scar; it was subsequently removed. The growth recurred and it has just been cured by the employment of injections of thiosinamine, used three times a week in 15 per cent alcohol. Dupuytren contractures are also cured by this method.

Dr. Ryfkogel, discussing cases presented by Dr. Campbell: There was a case about four years ago that came to me with an early cancer of the breast. I advised operation and she was willing, but was urged by friends to go to a physician who was beginning to do X ray work. When I saw her six months later I had to take off the arm as well as the breast in hope of saving her life and then could not do so. I have seen a number of these cases treated by the X-ray until too late for the knife. Speaking of these tumors, a good many surgeons are beginning to recommend the use of the X-ray for a different type of tumor. You remember the remarkable effect the X-ray has on the early embryonic tissue, particularly the cells of the testicle. You will remember that X-ray very rapidly produces azoospermia in animals and man. On this basis surgeons have begun to treat sarcomata with the X-ray. You all know the almost certain recurrence of sarcomata of certain types such as the mixed cell and the large and small round cell sarcomata. They practically all occur in the scar and it is supposed by many that there is some systemic condition that causes trauma to produce the sarcoma in certain people. You will also remember that Mievulitz had results from resection more satisfactory than from amputations and upon the basis of these two facts there has been a good deal of work recently on sarcoma by sub-capsular removal. The sarcoma is scooped out and afterwards treated with the X-ray and some very remarkable results have been obtained, much more so than with the wide removal by the knife.

Dr. Hannah, presenting case: I wish to present in interesting case of a boy six years old. He has had a phimosis since birth. The right testicle is down and the left is just below the external ring. Two months ago while playing on the street he ran against a water faucet and had considerable pain for a couple of days and then the pain stopped. Since then his mother has noticed a swelling in his right groin which is over Poupart's ligament and can not be reduced. It fluctuates and there is a little enlargement of the glands around the femoral opening. This is very interesting, because there is no hernia.

Dr. Silverburg, discussing case presented by Dr. Hannah: It is hard to come to a conclusion as to what the diagnosis is in this case. It does not seem to be connected with the spermatic cord. It does not seem to be in the nature of inflammation, eliminating these possibilities, the question is, is it a hematoma occurring after his injury? The skin does not show any discoloration. It is not connected with the lymphatic system. It is noticeable that the femoral glands are enlarged as well as the inguinal. It might be connected with the lymphatic system, possibly a lymphoma following injury.

Cases presented by Dr. Ryfkogel: This patient was operated on eight years ago by Dr. Bazet for goitre. On careful examination one can still find remnants of the thyroid, the size of a walnut, under the sterno mastoid muscle. When the patient first came to us it was a little difficult to get correct data, as he was a little dull at that time. He was very slow and sluggish in speech and somewhat disinclined to make any mental effort to recall his past symptoms. On examination his skin is dry and scaly in some places. The hair is also dry with a tendency to fall out, the finger nails also fall off on the slightest pretext. He came for a considerable thickening of one finger. He said that a doctor had opened it and let some pus out; just how much this thickening is due to fibrous and how much to myxomatous infiltration it is difficult to say. The man complains of some deafness at times. We put him on thyroid extract and he is very bright now in comparison and very much changed. He says that his father looks like him and the interesting question is how much of this condition is congenital cretinism and how much is due to myxedema following operation. The shape of the head is suggestive of mild cretinism as also are short arms and legs and the general build. The super clavicular pads are seen both in myxodema and cretinism. He has, however, no sign of edema anywhere. His face was at first slightly suggestive of it, but now there is some improvement. The skin is not now so dry as it was and has improved under thyroid extract. His symptoms, of course, are vary mild because there has been a great part of the gland left. He did not know that there was anything particularly wrong with him, but it was perfectly evident to us at the examination. You will notice the little papillary bbromata on his elbow. These are particularly interesting. They are so often seen in these myxedematous cases. Upon section they are fibroma with what is evidently myxedematous infiltration between the fibres. The same condition is found on the knees. I have seen these bodies more resembling typical warts, but not these curious salmon-colored tumors which you see here.

Case presented by Dr. Levison: The patient, a boy of nineteen years of age, who for the last year has been complaining of sore feet, has been treated in the usual way for rheumatism, without effect, so that when he was seen by me he was practically invalided, walking only on his heels because of the fact that it was the point of both feet which was least painful. I examined him carefully and the first condition that suggested itself was flat foot. Examination, however, showed that this condition was not present. Very careful palpation of the feet revealed tender points, upon pressure, in both heels, also at the point of insertion of the tendo-Achilles into the os-calcis, a tender point in the instep, and one on the outer side of the foot in the meta-tarso phalangeal articulation. The clinical diagnosis of multiple exostosis of a gonorrheal origin was made. The patient, however, denied all history of gonorrhea, and the expression of the prostatic secretion revealed nothing. The X-ray pictures of his feet were taken, and showed sharp exostoses, about 1 cm. in thickness, projecting from both heels. Much roughening was to be seen under the above described point of the tendo-Achilles, also on the outer side of the foot, so that the elinieal diagnosis was confirmed, excepting from an etiological standpoint. At the operation all of these exostoses were chiseled off, with the effect that the boy is now comparatively restored to health and usefulness. He now walks without difficulty and is able to work. I realize that this process is not unusual, but I have presented it because of the numerous incisions that were made to relieve the condition.

Dr. Carpenter, showing specimens: I wish to present two specimens of vesical calculus. These are rare only in size and the fact that they were found in the female bladder. I took this first one out thirty days ago, and thought at the time that it was a good-sized stone. It caused the ordinary symptoms of vesicle calculus. About three or four days ago I took this other one also from a female bladder. The interesting fact about this stone is that the patient is a woman 71 years of age, and has carried the stone between 10 and 20 years. She has been treated for all sorts of things, but no one discovered the stone. Both of these I removed by vesico-vaginal section, making my closure without drainage, and both cases

healed by primary union. The first closed without any drainage and never had a sign of leakage. The last one I did last Friday and the patient is doing nicely. There was some difficulty in getting the stone through the vesico-vaginal section; it is evidently a phosphatic stone. The larger one weighs 1400 grains. These two stones, however, are not as interesting as two others I have obtained in the interim, also from the female bladder. They both occurred in the same patient. She was a patient whom I had operated upon previously for vesico-vaginal fistula, the result of severe instrumental delivery in the country several months prior, in which the symphysis had been separated 2 inches, tearing the urethra from the bladder, necessitating quite an extensive plastic operation. In closing the opening in the bladder I foolishly used silk. I passed the suture from the vagina through the entire vaginal wall and bladder wall to its mucous membrane, and probably through its mucous membrane. Had I known whether it went through or not I would not have cared because I knew it would cut through and that would be the end of it. I put in two such sutures, tying the knots on the vaginal surface. The loop of the stitch buried in the mucous membrane afforded a nidus for the accumulation of the phosphatic deposits of the urine and held it there, and once it had formed it increased. The patient subsequently complained of the ordinary symptoms of stone in the bladder. It was not readily discovered. Cystoscopic examination showed but one stone not larger than the end of a finger, yet too large to come through the cystoscope. I passed the forceps through the urethra, got the stone with some little difficulty, but after getting hold of it it did not readily come away from the bladder wall, as it was being held by this stitch, but I thought I had a fold of the mucous membrane. After delivering it I found adhering to the stone the loop of silk, the adhesion between stone and silk being at the point of the loop opposite to the knot, making it evident that the weight of the stone dragging on the loop had caused the thread to cut its way through the vaginal and bladder walls, the tissues closing behind the stitch, permitting no stitch hole leakage, and stitch ultimately delivered from inside of bladder. A week later I had the same experience with another stone and another stitch in the same bladder. The patient is now well.

PYELO-LITHOTOMY.*

By JOHN McMAHON, M. D., San Jose.

C. H. A., aged 63 years, occupation merchant, weight 150 pounds prematuredly aged, due to a Bohemian life.

Nine years ago began to have attacks of renal colic, with severe pain extending to bladder and right testicle, causing vomiting. About two hours after cessation of these attacks the urine would become bloody and contained a large quantity of pus. These attacks would come on every few days. Cystitis developed and he was unable to retain more than three or four ounces in bladder. Had to rise several times at night to urinate, each time passing about half a cup of "milky urine tinged with blood and accompanied with severe rectal pains." More or less constipated all the time, with appetite capricious. X-Ray examination revealed stone in right kidney. Operation: Incision beginning 3¼ inches to the right of the median line of the spine, and 1½ inches below the twelfth rib, extending down to one inch above crest of ilium. Length of incision eight inches.

Kidney was brought into lumbar wound, and opened longitudinally, and a stone weighing 423 grains, two inches in length, one inch in diameter was removed. The lower pole of the kidney was distended by a large abscess in which the stone was lodged. The kidney abscess was flushed with normal saline solution, drainage tube inserted into abscess cavity around which sterile gauze was packed, tube removed on fifth day, wound healed by twenty-first day, able to take a ride on 28th day, complete recovery.

Composition of stone, urate of soda, uric acid and soda phosphate.

* Read before the Santa Clara County Medical Society.

THE GERMAN HOSPITAL QUESTION.

To the Editor of the State Journal.

Dear Sir:—As on a previous occasion, I ask you again to kindly publish a few remarks, which are written down by me after reading your editorial in the November, 1908, issue, relating to the German General Benevolent Society and the German Hospital of San Francisco.

There exist unquestionably a number of lamentable conditions amongst medical institutions in this state and the medical profession; and it becomes a duty of the medical press to lay the finger to the existing sores, to criticize and to remedy. But I believe in two things: First, that good can come of these discussions only when they are conducted in a temperate manner, when adverse criticism is well founded; and second, when existing evils are exposed without fear and without partiality.

Reading your aforesaid editorial and the notes about the University of California Hospital contained in the same issue, I am forced to two assumptions: First, that your knowledge of the true standing of the German General Benevolent Society needs some correction and enlargement: Second, that yourself and the men who have posted you in regard to the University of California Hospital, are not grasping fully the situation of commercialism as displayed in the University of California Hospital.

Let me explain both items! In well (or if you prefer, in much) governed states, such as the German Empire, the care for the sick and injured of moderate earning power has been developed to a very high degree as a branch of the science and practice of Sociology. The small wage-earner contributes a trifle, the employer adds something, the government adds something more, and these contributions form large resources; all this is done under legislative compulsion for the insurance of certain classes of people with small income. If an insured becomes sick or is injured, he (or she) does not need to ask for charity; he (or she) does not become a public burden; but he (or she) is entitled legally to treatment, medicine, compensation, etc., during his or her inability to work, paid for through the accumulated resources.

In this free country of these United States such compulsory insurance is impossible; here, as in so many other things, private enterprise takes the place of the parental government abroad. Many associations have been formed to insure to members medical aid in case of sickness or injury. The German General Benevolent Society is one of the many. There are in this German Benevolent Society a few thousands of people with moderate or small income; many a servant girl, workingman, etc.; they pay $1.00 a month of their hard earned money; when they become sick or injured they do not become a public burden in the County Hospital; they are not compelled to beg for admission to one of the so-called charity hospitals of this city; they do not engage a physician, whom they never expect to pay—but they go to the German Hospital for free treatment, to which they are entitled.

It is human nature, that not a few are anxious to gain the advantages of the German General Benevolent Society, who should never do that; some do it because they think it smart to beat a doctor out of a fee; others because they honestly believe that it is the same thing as to insure against losses through fire, etc.

But notwithstanding these objectionable features, I honestly believe there is no disputing the right (sociologic justification) of people with small means to insure themselves medical attendance in case of sickness by forming or joining mutual aid associations. The difficulty lies in the attempt to define who shall and who shall not be allowed to join such associations.

It is here, where discussions and propositions have to be made, that some understanding will be reached. Discussions based on facts! Let me inform you that not "every stick and stone" in the German Hospital has been paid for by the physicians of California, by the very simple reason that many sticks and many stones and other things of the hospital are not yet paid at all! The money,—that the German General Benevolent Society is in debt, that money certainly cannot have been taken out of the pockets of physicians in California.

Such unfounded criticism, such stump-oratory does not do any good; especially not when partiality is shown. You stigmatize the German General Benevolent Society as the worst enemy of the medical profession in California, because it "takes money out of the physicians' pockets," and in the same breath you praise the University of California Hospital immeasurably; and yet this University of California Hospital does the same thing that you allege the German General Benevolent Society does: the University of California Hospital "takes money out of the pockets of the physicians."

The University of California Hospital is located in a building erected by the taxpayers of California, the University of California Hospital is fitted up by money given for charity purposes. This money of the taxpayers of the state and the charitably inclined citizens (of whom you enumerate quite a number) is used to compete with those physicians of the state who own and maintain private hospitals (and they are many)! Every paying patient in the University of California Hospital should go to a sanatorium owned and conducted by physicians of the state; every cent and every dollar that is paid by private patients of the University of California Hospital to the treasury of the University of California Hospital for maintenance should be paid to physicians who own and conduct a sanatorium; every such cent and dollar is diverted from physicians of the state, or to use your own language, that "money is taken out of the pockets of physicians of California." The University of California Hospital being established by taxpayers' money and by money furnished for charity work is running in unfair competition with physicians (and other people), who are engaged legitimately in the business of conducting a sanatorium with their invested money.

There are more such institutions in San Francisco beside the University of California Hospital which succeed admirably to mix business and charity: St. Luke's Hospital, the Children's Hospital, the California Woman's Hospital, are all in the same boat; charity and business confounded and mixed in a most extraordinary manner!

It is certainly appropriate that a free and general discussion of the existing nuisances in medical aid societies and hospitals be had; but as I said before, facts, impartiality and temperate language are demanded, if any good is to be expected.

To begin the discussion by calling each other hard names, is to implore failure from the start.

Let us get together and talk it over, like gentlemen! We physicians of the German Hospital are most anxious to wipe out existing evils; we can accomplish this only with the assistance of the medical profession and the medical press. To insure us the aid of the medical press as well as of the medical profession, these foregoing remarks are written down.

Yours respectfully,

DR. HENRY V. KREUTZMANN.

SACRAMENTO COUNTY.

The regular monthly meeting of the Sacramento Society for Medical Improvement was held on Tuesday evening, October 27th, at the residence of Dr. G. C. Simmons, Dr. McLean being in the chair. Dr. F. E. Shaw of Sacramento was unanimously elected a member. Dr. Hatch reported the epidemic of diphtheria which occurred in the Southern California State Hospital last April, and its recurrence two months later, although all the inmates had been treated with antitoxin the first time. Cultures were taken from the throats of everybody in the hospital and 12 per cent were found to be "carriers" of the Klebs-Loffler bacillus. Isolation and treatment have reduced this percentage to about 7 per cent. An examination is being made of the patients in the Stockton State Hospital where there is no diphtheria for the purposes of comparison.

Dr. Twitchell stated that the Germans are trying to stamp out typhoid fever especially at the military posts along the Rhine. In one insane hospital in Bavaria, where the stools of all the patients were examined, twelve were found to be "typhoid carriers" with no symptoms, and were put in a separate ward.

The society placed itself on record as favoring a National Department of Health. The paper of the evening was read by Dr. G. C. Simmons; subject, "Concurrency of Diseases." The discussion was led, pathologically, by Dr. Turner, and, clinically, by Dr. G. E. Simmons. Among the rarer combinations of diseases reported were diphtheria and scarlet fever, scabies and secondary syphilis, diabetes and gonorrhea, syphilis and plague, chronic interstitial nephritis and cancer of stomach and pertussis and measles.

Malaria and typhoid are rarely associated in this neighborhood, although the report of the Panama Commission (50 per cent of the cases) shows that they may be common. Dr. Nichols stated that when he went to college students were taught that two diseases could not occur in the same individual at the same time, and for that reason patients were often purposely salivated.

The meeting adjourned to partake of Dr. G. C. Simmons' hospitality.

E. C. TURNER, Secretary.

SANTA CLARA COUNTY.

The regular monthly meeting of this Society was held Wednesday evening, October 19th, at the Hotel St. James with the following members present: Drs. Jordan, Brown, Wright, Miller, Marvin, Whiffen, Miner, West, Baker, Ulrich, Keith, Kapp, D. A. Beattie, Belknap, Wagner, Goodridge, Newell, Wilson, Kocher, H. B. Gates, Hervey, Moyer, Paul, Hopkins, J. I. Beattie, Harris and Park. The visitors were Drs. Hare, Bullock, Benepe, Thomas, Sanborn, Bowen, Glaze and Nesbit. Dr. Benjamin Thomas and Dr. Anny G. Bowen were elected to membership.

Dr. H. C. Brown gave a paper entitled "Observations in the Workshop of a Surgeon." Dr. Brown's paper dealt with the workings of the hospital conducted by Drs. Mayo of Rochester, Minn., and to

those present who have never been to the Drs. Mayo clinic, the paper was very interesting. To those who have been to Rochester, the paper brought back many pleasant recollections. The next paper was by Dr. H. B. Gates on "Bier's Treatment by Hyperemia." Dr. Gates having recently visited Bier's clinic and observed its workings, his remarks on the subject were very interesting. Dr. Gates also brought before the members, a patient upon whom he had used the treatment for an ankylosed wrist joint, as well as showing the method used in applying the constriction. Dr. Kocher opened the discussion on Dr. Gates' paper, as well as bringing for inspection, many forms of cups used in connection with the Bier treatment (the only form of cup missing was a stein). After the meeting the members assembled in the banquet hall where an hour or so was pleasantly spent.

K. C. PARK,
Secretary.

SHASTA COUNTY.

The Shasta County Medical Society met in regular quarterly session with Dr. Thos. W. Huntington and Dr. Philip King Brown of San Francisco, as guests. The morning was spent at the County Hospital, where Dr. Huntington performed a plastic operation on the upper eyelid of a man for severe ectropion, due to contracture resulting from a burn sustained by falling into a camp fire during an epileptic fit. Other interesting cases, both medical and surgical, were presented for consultation and discussion by our distinguished visitors. The society sat down in a body to an elegant and substantial lunch at the Hotel Lorenz.

The afternoon session was called to order at 2:00 p. m. in the Ladies' Room of the Elks' Hall by the President, Dr. C. J. Teass of Kennett. There were present at this meeting twelve laymen, all women, with goitres in situ or extirpated in part. They served as "clinical material." Dr. Brown reviewed in a succinct manner, the whole subject of goitre in its various forms and phases, using popular or technical terms as occasion demanded. He dwelt particularly upon the exophthalmic variety. He considered its treatment by the old-time remedies as useless or foolish; by the animal preparations as capricious and mostly disappointing; but he still had hopes in the newer serums. He maintained that surgical intervention offered the only assurance of relief. Dr. Huntington then spoke of the surgical treatment of exophthalmic goitre. He called attention to the anatomical relations which must be born in mind during the removal of the gland and to the necessity of leaving a part of the thyroid sufficient to carry on its normal function.

Dr. Huntington's main object was to emphasize the importance of the conservation of the parathyroids, whose location, smallness and independent blood supply placed them in jeopardy during the operation. The injury or removal of all of them gives rise to tetany, but if only a part of the bodies are destroyed the remainder have been found capable of rapid compensatory hypertrophy, assumption of full function and avoidance of the spasms.

A general discussion followed and the society gave a vote of thanks to Dr. Huntington and Dr. Brown for their visit and for their interesting handling of the subject. Dr. Teass read a report of the world's literature on gun shot wounds of the heart with recovery. He presented Constable Timothy Foby, who had been shot four months previous through the right ventricle and left lung and had been operated upon three days afterward for seropyopericardium with drainage. This case will take first rank as a unique phenomenon in the medical world.

Dr. R. F. Wallace read a report of an autopsy of a stab-wound of the heart. Dr. C. A. Mueller of Knob, Dr. C. E. Thompson of Dunsmuir, and Dr. E. E. Thompson of Sisson, were elected to membership. Dr. L. A. Bauter, Redding, was reinstated by vote of the society. The officers elected for ensuing year are: President, Dr. S. T. White, Redding; Vice-President, Dr. Wm. C. Tuckerman, Kennett; Secretary-Treasurer, Dr. B. F. Saylor, Redding.

A vote of thanks was tendered to the Elks for the use of their rooms. The meeting was brought to a close by a sumptuous banquet served at the Golden Eagle in the evening. There were fourteen practitioners present.

DR. B. F. SAYLOR,
Secretary.

SONOMA COUNTY.

The Sonoma County Medical Society met at the Home for Feeble Minded, Eldridge, Cal., on the afternoon of the 6th inst. Dr. Edward Gray read a paper on "German Measles" which the Society wished published in the Journal. The Society was entertained by Dr. Dawson, a clinic of half a dozen different diseases.

The next meeting will be held at Santa Rosa at which time tuberculosis will be discussed.

The Sonoma County Medical Society heartily endorses the plan of the A. M. A. in its endeavor to send good lectures to various county societies and to other places where there is no society. The president of the State Society with the county president should work out the plan and present same to the various county societies, so that we may get together for the benefit of not only the physician but the laity.

G. W. MALLORY,
Secretary.

VENTURA COUNTY.

The Ventura County Medical Society met at the office of Dr. Chas. Teubner in Saticoy, on the evening of October 12th. Paper by Dr. Teubner, subject "Rabies"; a lively discussion by all present resulted. After the routine business was disposed of, we were invited into the dining room, where Mrs. Teubner had prepared an elegant spread, which to say was enjoyed by all, would be putting it mildly. After extending a vote of thanks to Mrs. Teubner for her hospitality, we adjourned to the office again to perfect arrangements for the next meeting which was decided to be held on December 7th, in Ventura at the office of Dr. Stockwell.

J. C. BYNUM,
Secretary-Treasurer.

ADDITIONAL NEW AND NON-OFFICIAL REMEDIES.

To the list of articles accepted by the Council, which will appear in the Journal November 7, there have been added the following:

Tabloid Ergotinine Citrate (Burroughs Wellcome & Co.).

Tabloid Ergotinine Citrate & Strychnine Sulphate (Burroughs Wellcome & Co.).

Tabloid Hypophosphites Compound (Burroughs Wellcome & Co.).

Enule Soap Compound (Burroughs Wellcome & Co.).

Gr. Eff. Caffeine & Potass.-Bromide Comp. (H. K. Mulford Co.).

Gr. Eff. Carlsbad Salt (Artificial) (H. K. Mulford Co.).

Gr. Eff. Sodium Sulphate (H. K. Mulford Co.).

Eusemin (Leonard A. Seltzer) (H. K. Mulford Co.).

From the former list, Syrup Hydriodic Acid (R. W. Gardner) has been omitted.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, EXAMINATION OF APPLICANTS,

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B street SE., Washington, D. C., Monday, January 11, 1909, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. Officers are entitled to furnish quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month, according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent in addition to the regular salary for every five years' service up to 40 per cent after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

PURE FOOD EXHIBIT OF THE STATE BOARD OF HEALTH.

In the October issue of the State Journal we commented on the Pure Food Exhibit at the State Fair, and erroneously gave the credit for this to the Public Health Committee of the State Society. Dr. Foster, Secretary of the State Board of Health, has very kindly called the attention of the Journal to the fact that the exhibit referred to, with the exception of a collection of laws and reports, was prepared entirely by the State Board of Health. It is a pleasure to make this acknowledgement, for the reason that we are only too glad to welcome any additional authority given to or activity of the State Board of Health.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

At the last meeting of this association, Dr. J. A. Witherspoon of Nashville, Tenn., was elected president, and Dr. Henry Enos Tuley of Louisville, Ky., was re-elected secretary. The next meeting will be held in St. Louis, Mo., October, 1909.

FOUND, POCKET CASE OF INSTRUMENTS.

Dr. Wm. F. Freeman, Box 147, The Needles, advises the Journal that he has in his possession a pocket case of instruments which was found in San Francisco, about a year ago. Any one having lost such a piece of property should correspond with Dr. Freeman, giving a description of the article lost.

COLORADO SOUVENIR BOOK ON TUBERCULOSIS.

Members of the Colorado anti-Tuberculosis organization, have prepared a book of statistical information, with climatic maps, weather charts, etc., which was distributed to those attending the International Congress. Those who did not attend may secure a copy by addressing Dr. Wm. N. Beggs, 823 14th street, Denver, and remitting 25c.

FER-DON, THE FAKIR AND HIS TAPE WORMS.

Some interesting affidavits appeared in the Eureka Californian, of August 22d. At this time the "wonderful" Fer-Don, who is now located in Oakland, we believe, was doing business in Eureka. At one of his meetings he presented a very large tape worm, which he announced had been removed from one of his patients. The affidavits disclosed the fact that this was obtained from a butcher who found it in the intestine of a sheep.

TUBERCULOSIS DIRECTORY.

The Charities Publication Committee, 105 East 22d street, New York, has recently issued a very unique volume under the title of "The Campaign Against Tuberculosis." The book is really a directory of all institutions and organizations dealing with tuberculosis, and includes a digest of legislation on the subject. Copies may be secured by remitting $1.00 to the addres given above.

CALIFORNIA BULLETIN ON TUBERCULOSIS

The California Association for the Study and Prevention of Tuberculosis, president, Mr. C. B. Boothe, Los Angeles, secretary, Dr. Geo. H. Kress, Los Angeles, has begun the publication of a bi-monthly journal, entitled "The Bulletin of the California Association for the Study and Prevention of Tuberculosis." The subscription price is $1.00 a year, which includes membership in the association.

CUT RATE COMPETITION.

The following letter, which certainly is the limit for cold commercial impudence, was received by a San Francisco physician. The letter is dated, Glasgow, the 24th of July, 1908, and bears at the top the heading, Burrell & Son, Steamship Managers:

> "We shall be glad to hear at your earliest convenience what your fee would be for medical attendance to our steamers, calling at San Francisco. Your fee to include all medicine, and to be irrespective of the number of visits made."

We understand that a number of physicians in San Francisco received similar letters, and it would appear as though Burrell & Son desired to secure competitive bids.

STATE SOCIETY COMMITTEES.

The elected and appointed committees of the State Society are as follows:

Committee on Arrangements—William Simpson (chairman), San Jose; T. C. Edwards, Salinas, and Saxton T. Pope, Watsonville.

Committee on Cancer Investigation—W. F. B. Wakefield (chairman), San Francisco; Martin H. Fischer, Oakland, and Emmet Rixford, San Francisco.

Committee on Medical Education—F. Dudley Tait (chairman), Jas. H. Parkinson, Sacramento, and Andrew S. Lobingier, Los Angeles.

Committee on the Prevention of Venereal Diseases—A. B. Grosse (chairman), San Francisco; J. C. Spencer, San Francisco, and A. E. Osborne, Santa Clara.

Public Health Commission—F. C. E. Mattison (chairman), Pasadena; Geo. H. Kress and L. M. Powers, Los Angeles; Stanley P. Black, Pasadena, and W. F. Snow, Stanford.

Committee on Publication—Philip Mills Jones (chairman), Langley Porter, John Spencer and Harry M. Sherman, San Francisco, and Martin Fischer, Oakland.

Committee on Public Policy and Legislation—F. B. Carpenter (chairman), San Francisco; J. H. Parkinson and Jas. W. James, Sacramento.

Committee on Scientific Work—Martin Fischer (chairman), Livermore; A. W. Hewlett and Harry M. Sherman, San Francisco, and C. Van Zwalenburg, Riverside.

Committee on Tuberculosis—George H. Evans (chairman), H. C. Moffitt, C. M. Cooper and Rene Bine, San Francisco, and F. M. Pottenger, Monrovia.

Diseases of the Nose, Throat and Ear, Medical and Surgical. By William Lincoln Ballenger, M. D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois; Fellow of the American Laryngological Association; Fellow of the American Laryngological, Rhinological and Otological Association; Fellow of the American Academy of Ophthalmology and Otolaryngology, etc. Illustrated with 471 engravings and 16 plates. Lea and Febiger, 1908.

Dr. Ballenger has given us a book that truly embodies what is new and what is to be recommended in these special branches of medicine. His own experience and choice of methods runs through the pages, an example and guide to his readers. Too much can not be said in favor of this kind of a publication which is not a compilation but an authoritative treatise giving the result of personal experience. The chapter on the choice of septum operations with the surgical correction of obstructive lesions of the septum gives the various methods in vogue, but is also a good guide as to the method to be pursued in a given case. The reader is not led to suppose that the submucous resection or whatever the method described is the best for all cases. The principles of treatment of inflammations and the modalities for promoting the reactions of inflammations are well described, the author quoting Adami extensively. All of the newer remedies such as the Leukodescent Light, Biers treatment and the Opsonic Index and Vaccine Treatment of Infectious Diseases receive careful attention.

The submucous resection of the inferior turbinate bone is carefully described, but the reviewer feels that very few have the necessary dexterity to carry it out. Naturally, the swivel knife receives marked attention and while its place is well established in the submucous resection of the septal cartilage, I feel that the multiplicity of uses to which it is put, as, for example, in the removal of the middle turbinal, page 155, are not to be recommended. The surgery of the accessory sinuses is complete and well illustrated. A chapter is devoted to the surgical correction of external deformities, a subject heretofore but poorly discussed.

The radical excision of the tonsils is up to date, the author giving his method of using only a scalpel. His ideas are sane on this subject and he believes that only the diseased portion of a tonsil need be removed, i. e., if one can take out all of the diseased tonsillar tissue leaving the capsule, the latter is preferable. The larynx and ear are equally well described and in keeping with the tone of the book. The various plastic mastoid methods are made very simple. The surgery of the facial and hypoglossal nerves with a detailed technic is very complete. Numerous illustrations and a number of colored plates help to make this a treatise on the above subjects which would be difficult to duplicate.

W. S. F.

Borderland Studies. Miscellaneous Addresses and Essays Pertaining to Medicine and the Medical Profession, and Their Relations to General Science and Thought. By George A. Gould, M. D., Former Editor of The Medical News, The Philadelphia Medical Journal, Etc., Etc.

The versatility of Dr. George Gould is no where more evident than in this collection of miscellaneous addresses and essays, all of them suggestive, instructive and charming. They cover a wide range, from King Arthur's Medicine to Child Fetiches and Vocation. The opening essay contains a history and comparative study of the dwellings of human beings at various epochs and in different countries, in their relation to fresh air and light. This is really a study in hygiene. The next one, entitled "A System of Personal Biological Examination, Etc.," is a plea for a thorough-going and repetitive system of physical and pathological examinations, which will give us ultimately a general and comprehensive science of anthropology, based upon all the data, morphological, physiological and pathological of the entire individual.

"Phophecy and prognosis are based upon a thorough knowledge of the past and present fact, a rigid understanding in a scientific sense of the evolution of the organism and of its present departures from a normal standard. For his children a foresighted man must wish such an accounting, such a prophecy and prognosis; and as to himself every intelligent adult, when he awakens to scientific consciousness, must try to look forward through the years, and to reckon up his powers and possibilities of life. The crowning work of scientists is to turn science into prescience. Unification of the sciences dealing with the conduct of life; the making practical and useful our knowledge of the individual organism, and lastly, to establish a scientific prescience—such are the ideals of a living anthropology."

The third essay on the "Life Study of Patients" deals with the biographic method of studying disease. Dr. Gould's idea is that the comparative study of a large number of clinical life histories would throw light on the etiology of many diseases. This essay at once recalls the numerous interesting, though at times partisan, writings of Dr. Gould on eye-strain; and the opening sentence of Spencer's "First Principles": "We too often forget, not only is there 'a soul of goodness in things evil,' but very generally also a soul of truth in things erroneous."

The fourth essay on "The Seven Deadly Sins of Civilization" deals with the etiological importance of tobacco, tea, coffee, alcohol, sugar, venereal diseases, lack of fresh air and light, and eye-strain in the production of disease, while the next one on "Disease and Sin" largely concerns itself with "the social evil." That on "King Arthur's Medicine" is a causerie on medical practice and experiences of that time. The chapter on "Some Intellectual Weeds of

American Growth" is mainly a running commentary on some of the fads of the nouveau siecle and pretentions of a host of charlatans. Following this are two very interesting chapters, one entitled "Concerning Crank Physicians," the other "Some Ethical Questions." The essay on "History and Physchology of Words" is unusually interesting, while the chapter on "Style" should be read by every writer on medical subjects. The chapter on "Child Fetiches" is a contribution to the psychology of child life and the following and last chapter on "Vocation" is an address delivered before the Medical Department of the University of Syracuse. The contents of this chapter may be summed up by saying that medicine is a "noble profession, but a miserable trade."

A. J. L.

Practical Life Insurance Examination. By Murray Elliott Ramsey, M. D. J. B. Lippincott Company, Philadelphia and London. 1908.

While medical examinations for the purpose of life insurance require nothing more than a complete and accurate physical examination and the determination of the risk of the application, based on the history and physical findings, nevertheless this branch of medicine seems to have developed into a specialty. The author of this volume has written this book believing that there is a special need for it, and he has given particular attention to physical diagnosis and prognosis of the diseases of the chest and abdomen, for these regions constitute the seat of organs and structures which enter most vitally into the welfare of an insurance company. So far as the reviewer has been able to determine, there is little in the book that can not be found in any good work on physical diagnosis. The only original part is the last chapter which deals with the insurance of "Sub-standard Lives." This constitutes the only obvious raison d'etre for the existence of the book. A. J. L.

Examination of the Ear. By Selden Spencer, A. B., M. D., Instructor of Otology, Washington University; Aural Surgeon to the Martha Parsons Free Hospital for Children. C. V. Mosby Medical Book and Publishing Company, 1908.

This is a small book about 65 pages, designed for use in an undergraduate course of otology. Since the ability to make an intelligent inspection of the ear-drum, head, tympanic cavity and otitic region, as well as the nasal cavities and pharynx is essential to diagnosis, considerable space has been devoted to the anatomy of these parts; and the text is made clear by a number of very excellent illustrations. Brief descriptions of the methods of examination of the ear have been included. While the book contains little that is either original or complete, its use to beginners may be considerable. A. J. L.

Electrical Treatment. By Wilfred Harris, M. D., F. R. C. P., Physician to Out-Patients, Physician to the Department for Nervous Diseases, and Lecturer on Neurology, St. Mary's Hospital, etc. Illustrated. W. T. Keener and Co. 1908.

This small volume belongs to a well-known series which has already given us those excellent monographs on Light and X-Ray Treatment of Skin Diseases; Serums, Vaccines and Toxines in Treatment and Diagnosis; Organotherapy, and the Open-Air Treatment of Pulmonary Tuberculosis. In the present book the same conciseness and clearness of exposition which characterized the other volumes of the series is here evident. Anyone interested in the subjects will, by studying the work, have little difficulty in grasping its essential points; and special attention has been given to what may be done in medical practice with a good faradic and galvanic battery.

CHANGES OF ADRESSES.

DECEMBER CHANGES.

Regensburger, Alfred E., from 2090 Pine st., to 166 Geary st. (Whittel Bldg.), San Francisco.

Keck, Fred'k C., returned from Europe.

Manson, Josef I., from 2425 Pine st., to 1915 Pacific ave., San Francisco.

Harvey, Wm. P., from 1059 O'Farrell st., to 240 Stockton st. (Schroth Bldg.), San Francisco.

Ash, Rachel L., office 2576 Washington st., San Francisco.

Green, Jonathan, 656 Clement st., San Francisco.

Topp, T. M., from Raymond, Cal., to Turlock, Cal.

Keeney, Jas. W., 240 Stockton st. (Schroth Bldg.), San Francisco.

Dresel, Gustav, from 1059 O'Farrell st., to 240 Stockton st. (Schroth Bldg.), San Francisco.

Wiel, Harry I., from 943 Van Ness ave., to 135 Stockton st. (Butler Bldg.), San Francisco.

Fraser, Mary Lesley, from 213 Sacramento st., Vallejo, Cal., to 413 Georgia st., Vallejo, Cal.

Thomas, Benj., from address unknown to Palo Alto, Cal.

Thomas, Philip Matson, from 1059 O'Farrell st., to 240 Stockton st., San Francisco, Cal.

Topping, Frank P., from 1059 O'Farrell st., to 240 Stockton st., San Francisco, Cal.

McLean, R. A., from 801 Van Ness ave., to 111 Ellis st. (Powell Bldg.), San Francisco.

Jones, Jno. W., from Elwood, So. Pasadena, Cal., to 240 Stockton st. (Schroth Bldg.), San Francisco.

Stover, Wm. M., 1180 Marsh st., San Luis Obispo, Cal. (San Luis Sanitarium.)

Cutter, Jas. B., from Albuquerque, N. M., to Kockhoff Bldg., Sixth and Main sts., Los Angeles, Cal.

Meyer, Henry, from Post and Gough sts., to 240 Stockton st. (Schroth Bldg.), San Francisco.

Lewis, Will J., from Los Angeles, Cal., to Santa Ynez, Cal.

Curtis, H. L., from 918 Ellis st., to 217 32nd ave., San Francisco.

Farnum, Chas. E., from 513 Devisadero to 505 Devisadero st., San Francisco.

Deardorff, A. G., from 2162 Vine st., Berkeley, Cal., to 2032 Shattuck ave., Berkeley, Cal.

Craig, Murdock A., from Lower Lake, Cal., to 520 Sacramento st., Vallejo, Cal.

Gregory, A. M., from Susanville, Cal., to Quincy, Cal.

Speicher, A. F., from Coulter Bldg., Los Angeles, Cal., to Wright & Callender Bldg., Los Angeles, Cal.

Day, Robt. V., from Bradbury Bldg., Los Angeles, to Lissner Bldg., Los Angeles, Cal.

New Members.

Wm. L. Holt, 420 East Valerio st., Santa Barbara, Cal.
Carl A. Mueller, Knob, Shasta Co., Cal.
Chas. E. Thompson, Dunsmuir, Siskiyou Co., Cal.
Ernest E. Thompson, Sisson, Siskiyou Co., Cal.
Lucian A. Bauter, Redding, Shasta Co., Cal.
Julius H. Hurst, Montecito, Santa Barbara Co., Cal.
Will J. Lewis, Santa Ynez, Santa Barbara Co., Cal.
T. Albion Stoddard, Santa Barbara, Cal.

Deaths.

J. A. McNaughton, Los Angeles, Cal.
Manuel V. Fernandez, Los Angeles, Cal.
James Sherbourne Riggs, Redlands, Cal.
Jahiel S. Riley, Crockett, Cal.
Joseph Henry Soper, Seattle, Wash.

Reinstated.

Lewis Jerome Belknap, San Jose, Cal.